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MARCH, 1909.

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$3.00 with Directory.

TEXTILE WORLD RECORD

LORD & NAGLE COMPANY ~ BOSTON · MASS.

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The Textile-Finishing Machinery Co.

HOWARD BUILDING

STAIRWAYS, 83 EXCHANGE PLACE [ENTRANCES] ELEVATOR, 171 WESTMINSTER ST

PROVIDENCE, R. I.

Singeing Machines,

Boiling Kiers,

Washers, Squeezers,

Chemic and Sour

Rusden Patent

Continuous Chainless

Steamer,

Aniline Agers.

Dyeing Machines.

Open Soapers,

Blanket Washers,

Color Kettles,

Horizontal or Vertical Drying Machines, with Copper or Tinned Iron Cylinders,

Automatic Tentering Machines,

Water and Starch Mangles,

Dampening Machines,

Dyeing Machines for Chain Warps.

BUILDERS OF ALL KINDS OF

MACHINERY

FOR

BLEACHING

DYEING

DRYING

AND

FINISHING

Calenders for Rolling, Glazing, Chasing and Embossing, also Calenders for Moire Finish.

Sole Manufacturers of Patented Flexible Cloth Expander for Cylinder Drying Machines, Calenders, Mangles, &c.

Patent Combination Rolls Made of Cotton and Husk, especially adapted for Soft Finish, Unequalled for Elasticity and Durability.

Cotton, Paper, Husk, Chilled Iron, Brass and Rubber Rolls, Electro-deposited Copper Rolls for all Purposes.

Padding and Drying Machines for Shade Cloths.

Single and Double Cylinder Engines.

Hydraulic Presses and Pumps.

Mercerizing Machinery for Piece Goods and Yarn in the Warp or Chain

ALL KINDS OF OUTFITS FOR BLEACHING THREAD AND SOFT TWISTED YARN.
BLEACHING MACHINERY FOR YARNS IN THE WARP OR CHAIN.

Estimates, Drawings and full particulars of complete plants furnished on application

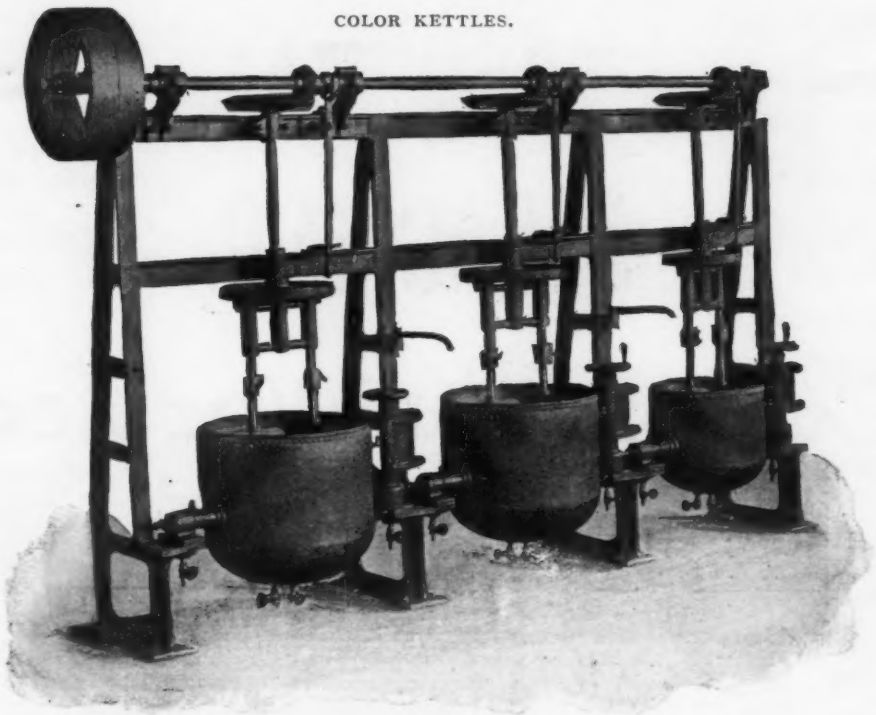
Southern Agent, STUART W. CRAMER, Charlotte, N. C., Equitable Building, Atlanta, Ga.

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

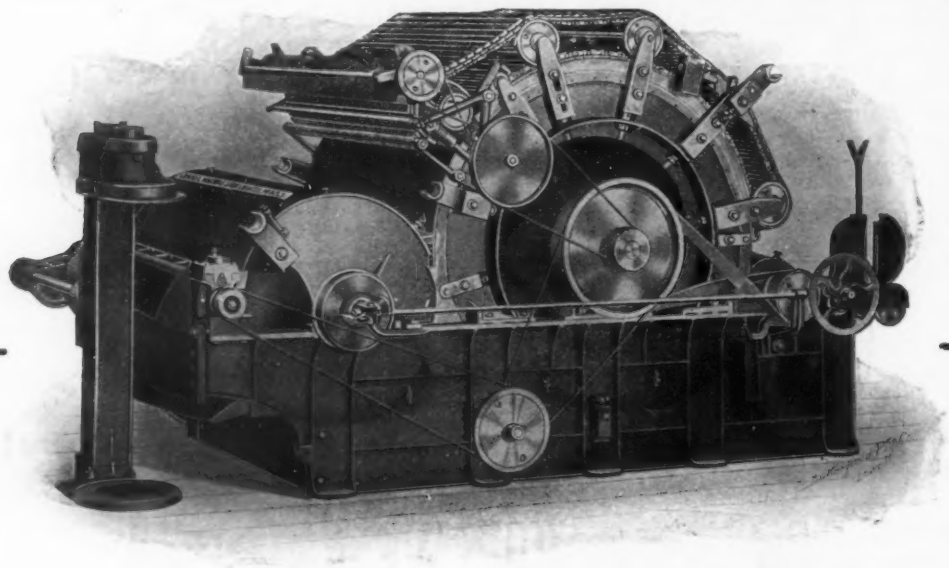
Providence Office, Room 417 Industrial Trust Building.

COLOR KETTLES.



Bleaching, Dyeing, Drying, Finishing, Machinery

for all kinds of textile fabrics.



Cotton and Worsted Machinery

With Modifications to Suit Any Class of Work.

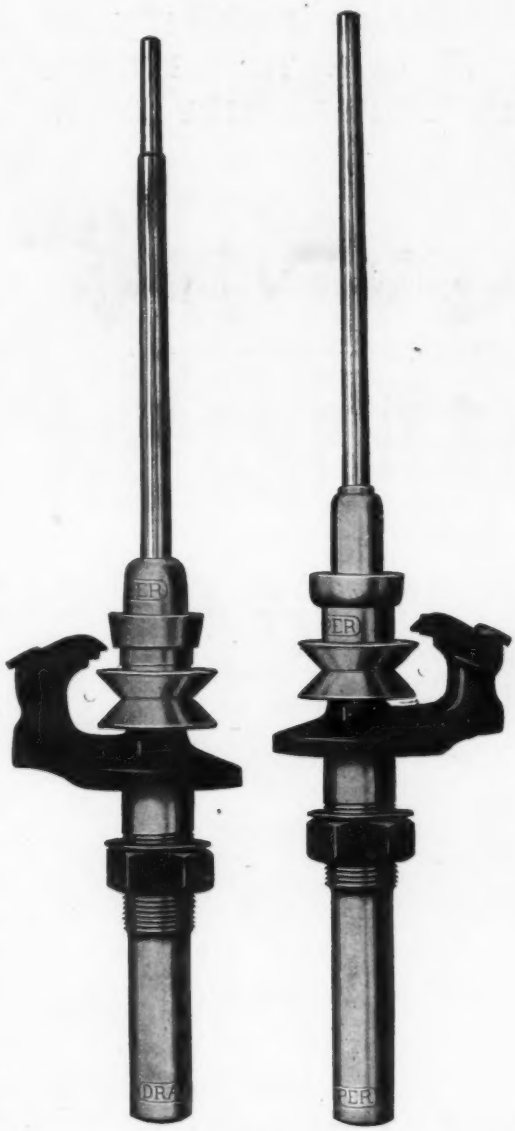
Cotton Machinery: Cards, Railway Heads, Drawing Frames, Fly Frames, Speeders, Ring Spinning Frames, Twisters, Spoolers, Reels, Warpers, Slashers, Winders, Looms, Shearing Machines, Balling Machines, Folders, Stamping Machines, Sewing Machines, Size Pumps, Size Kettles, Drawing-in Frames, Baling Presses, Indigo Grinders.

Worsted Machinery: Spinning Frames with caps, rings or flyers, Dandy Rovers and Reducers, Cone Second Finishers, Reducers and Rovers, Gill Boxes for Drawing, Preparing and Finishing, Weigh Boxes and Drawing Boxes, Cap Trap, Flyer and Ring Twisters.

Plans, Specifications and Estimates furnished upon application.

Lowell Machine Shop

LOWELL, MASS.



Two New
Large Size
Spinning Spindles.

We make

Draper,
Whitin,
McMullan

and other
types of

Spindles;

also

Northrop Looms,

Twisters,
Warpers,
Spoolers,
Reels,

Banding Machines,

etc., etc.

Draper Company,
HOPEDALE,
MASS.

THE EMPHATIC SUCCESS OF OUR "IDEAL" AUTOMATIC LOOM IS DUE TO SEVERAL SALIENT POINTS OF SUPERIORITY OVER ALL COMPETITORS:

1st. The ease and smoothness with which they start up.

2d. The acknowledged superiority of the cloth woven.

3d. Simple and thoroughly mechanical construction, assuring freedom from the constant breakage and expensive repairs attending other automatic looms.

4th. No special bobbins, shuttles or other expensive parts.

5th. Ability to use cop or bobbin filling interchangeably.

6th. Superiority of warp stop motion which does not break or fray the softest yarn.

7th. Of the thousands in operation not a single bobbin or crank shaft broken.

IN PROOF OF CLAIMS WE POINT TO THOSE MILLS FORMERLY USING OUR COMPETITORS' LOOMS THAT ARE NOW USING OURS.

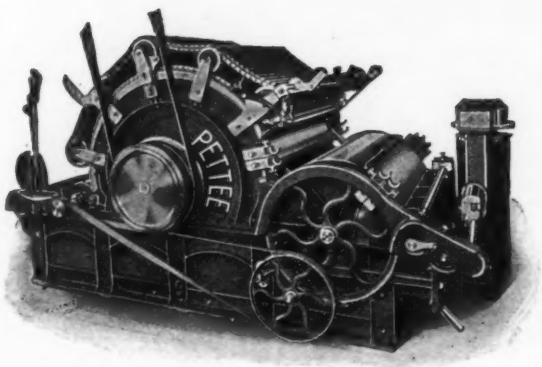
The Stafford Company

Readville, Mass.

Saco and Pettee Machine Shops

NEWTON UPPER FALLS, MASS., U. S. A.

COTTON MACHINERY



Revolving
Flat Cards,
Drawing
Frames,
Railway Heads,
Slubbing,
Intermediate
and
Roving
Frames,
Spinning Frames,
Spoolers
and
Reels.

Shops—

Biddeford, Me.

Newton Upper Falls, Mass.

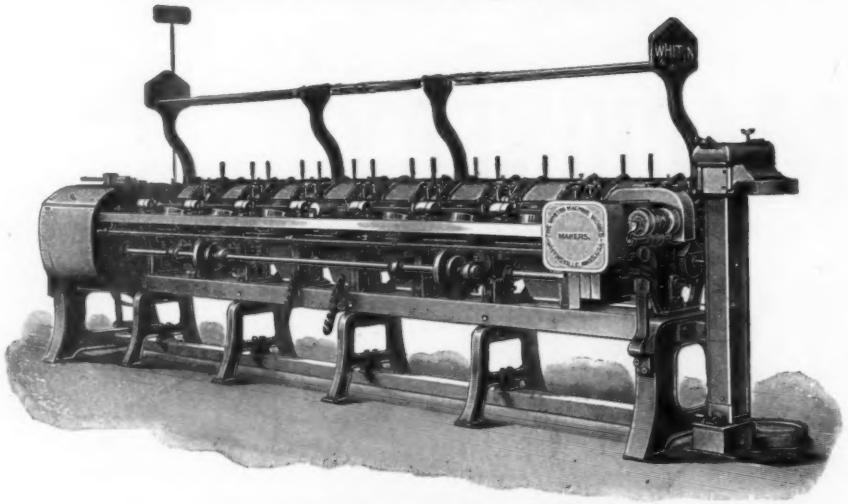
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

THE

WHITIN MACHINE WORKS,

Cotton Machinery

WHITINSVILLE, MASS.



HIGH SPEED COMBER 1906 MODEL.

Revolving Flat Carding Engines,
Sliver Lap Machines,
Ribbon Lap Machines, Combers,
Railway Heads, Drawing Frames,
Spinning Frames, Spoolers, Twisters,
Long Chain Quilling Machines, Reels, Looms.

Southern Agent,
S. W. CRAMER

Trust Building, CHARLOTTE, N. C.
Equitable Building, ATLANTA, GA.

"Kitson Products"

Blowing Systems

For Conveying Bale Cotton
from Storehouse to Picker-room

Self-Feeding Openers
Lappers and
Cleaning Trunks

Waste-Working Machinery

Raw Stock Cotton Dryers

We own the Patterns and can furnish REPAIR PARTS for PICKERS
formerly built by

WHITEHEAD & ATHERTON, . Lowell, Mass.
ATHERTON MACHINE CO., - - Lowell, Mass.
A. T. ATHERTON MACHINE CO., Pawtucket, R. I.

Kitson Machine Shop

Lowell, Mass.

SCOTT & WILLIAMS

2079 E. Cumberland Street, Philadelphia, Pa., U. S. A.

BUILDERS OF

Full Particulars, Samples nnd Special Catalogues on Application.

Rib Knitting Machinery for Underwear and Hosiery

Plain, Single Lever or with Welt, Slack Course and Automatic Slackening Device for Welt.

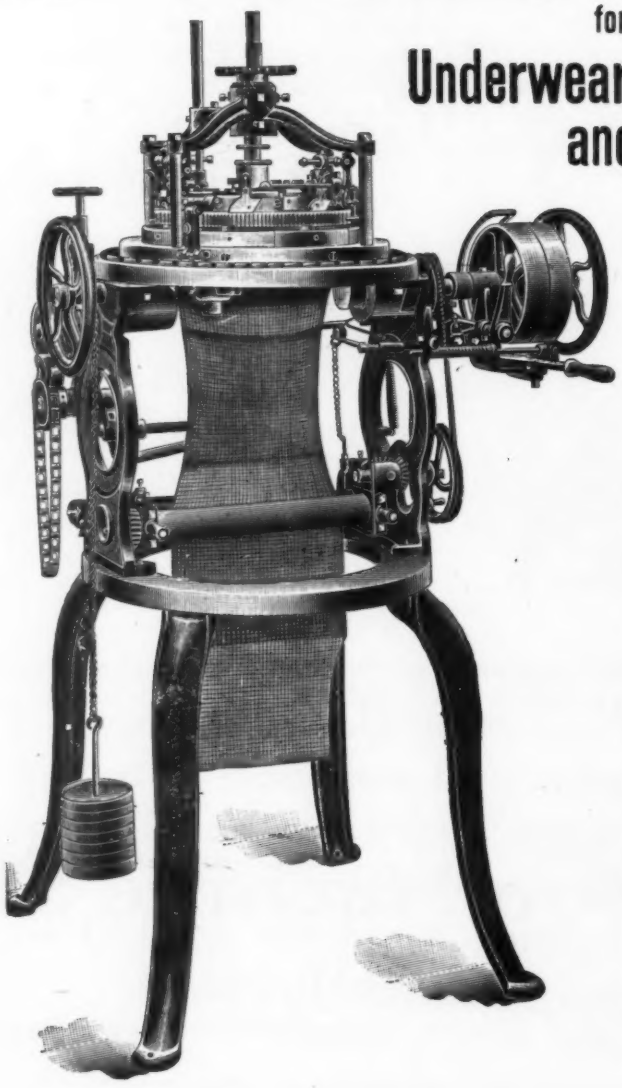
Improved Measuring Device, by actual length knit.

Sizes 8 to 24 inches, inclusive, varying by one inch.

Number of Feeds, 4 to 12, according to style and diameter of machine.

Solid Forged Steel Cylinders, specially hardened or with patent inserted walls for fine fabric.

Special Machinery for Sweaters, etc.



The illustration shows our

Improved High Speed Single Lever Automatic Ribbed Underwear Machine

for making ladies' and gents' ribbed underwear, union suits, etc., plain and shaped.

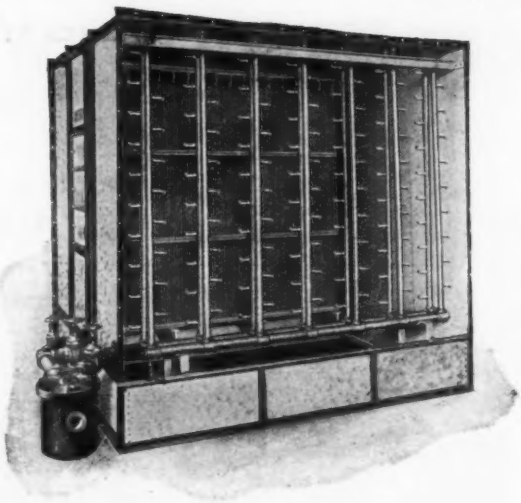
We build Loopers, Ribbers and other Machinery for Knitting Mills

As well as

A Complete Line of Full Automatic and 7-8 Automatic Seamless Hosiery Machinery.

The Carrier System

Heats, Cools
Humidifies
Ventilates
Automatically
Controlled



One Apparatus for an Entire Mill

WITH THE CARRIER SYSTEM there are:

No mass of water or other pipe throughout the mill.
No strainers placed overhead to be cleaned.
No chance of water leaking, overflowing or being sprayed on the machinery.

WITH THE CARRIER SYSTEM the complete apparatus for the entire mill is placed in one central plant, giving different relative humidities desired in each department.

THE STRAINERS, of which there are two, are easily inspected and cleaned.

The discharge strainer has five wing nuts that are loosened by hand, allowing the basket to be removed, cleaned and put back in place in less time than it takes to write this.

Carrier Air Conditioning Co.

of America

39 Cortlandt St., New York

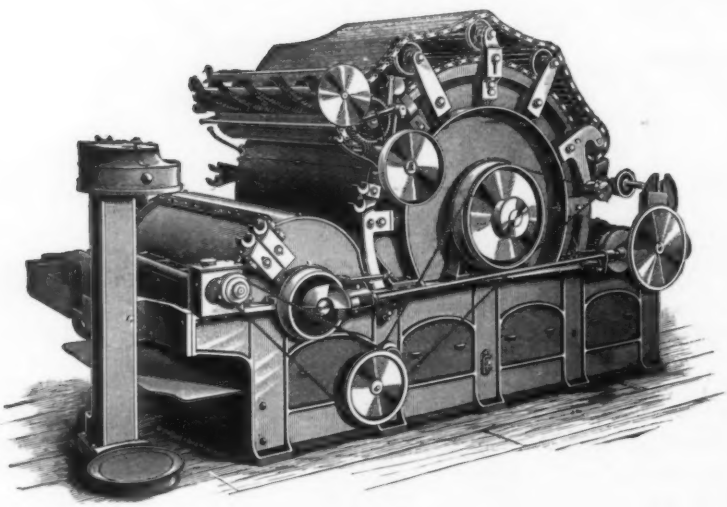
(107 C)

Cotton Machinery

MASON MACHINE WORKS,

TAUNTON, MASS.

Southern Office,
Charlotte,
N. C.



Cards,
Combers, Railway
Heads, Drawing Frames
Spinning Frames, Mules and Looms

INCLUDING

Plain and Fancy Silk Looms

The Best That Money Can Buy

IN THE WAY OF

Perfected Modern Machinery
Highest Grade Materials
Most Able Management

Cannot possibly yield best results in any textile mill which has not a good supply of

UNIFORMLY PURE SOFT WATER

Eureka Apparatus of 10,700 Gallons Hourly Capacity. Burson Knitting Co., Rockford, Ill.

Bad Water nullifies in discouraging ways the most persistent efforts toward quality and economy of production.

Good Water assists at every point and in every process, removing all uncertainties as to results.

The Dodge Automatic "Eureka" Water Softener and Purifying System

eliminates all bad-water difficulties and provides the essential conditions necessary for highest quality, at lowest cost.

It co-operates with the best of regular mill equipment, the best of materials and the best of operative methods, to the attainment of best productive results.

Then, too, there is the great advantage of having non-incrusting feed water for the boiler plant.

Installations made to suit the conditions of all cases. Each proposition considered individually, and apparatus proportioned accordingly. Results guaranteed. No guess work.

YOU SHOULD READ OUR RED BOOK NO. 414.

Dodge Manufacturing Company
MISHAWAKA, INDIANA

Water Softener Department

IMPORTANT ANNOUNCEMENT

Manufacturers are hereby warned against using infringements upon the Cramer patents for

Automatic Regulators for Humidifying Systems

Before considering the purchase of infringing devices, make sure that the vendor is amply financially responsible and guarantees to imdemnify the purchaser against loss by damage suits, for both infringers and users of infringements, however crude such infringements may be, will be prosecuted to the full extent of the law.

Don't be imposed upon by misleading terms and claims as to what the vendor's patents cover; anyone can get a patent for almost anything in the way of specific constructions; the vital question is whether or not such patents infringe other prior patents.

Cramer System of Air Conditioning

Spray Humidifiers as good as the best, of large capacity, durable, sanitary, air cleansing and efficient.

Air Conditioners *comprising all the good points of spray humidifiers*, particularly as to large moistening capacity and simplicity; *combined with the good points of evaporation types of humidifiers*, such as complete evaporation of the moisture, large air cleansing capacity and good distribution; *and without the objectionable features of either type*, such as wetting down, localized moistening, large and clumsy constructions, unsanitary conditions due to difficulty of access for cleaning and to the use of wet absorbent disease-breeding materials, and largely reduced efficiencies at all except the lowest humidities,—*features*, simplicity, durability comprising only seamless drawn sheet copper casings, a spray nozzle and a fan. The fans are either electrical driven, or mechanically driven with belts or ropes as the special requirements of each case dictate.

STUART W. CRAMER

Providence, R. I. **Charlotte, N. C.** **Atlanta, Ga.**

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

SOLE AGENT

IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber will comb from 7-8" stock to Sea Islands.
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.
Archbutt-Deeley System for purifying and softening water.

GEORGE HODGSON, LTD.

Looms for Worsteds, etc.

THE PATENT AUTOMATIC FEEDING MACH. CO., LTD.

Patent Feeding Machines for wool, cotton, flax, fur and fibrous material.

JOSEPH SYKES BROS.,
Card Clothing for Cotton.

JAMES CRITCHLEY & SONS,
Card Clothing for Woolen and Worsted.

WILSON BROS. BOBBIN CO.'S.

Bobbins, Shuttles, etc.

Dronsfield Bros. Grinding Machinery and Emery Filleting. The Best French and English Combing and Rubbing Aprons. Harding's Pins and Circles. Varey's Fallers, etc.

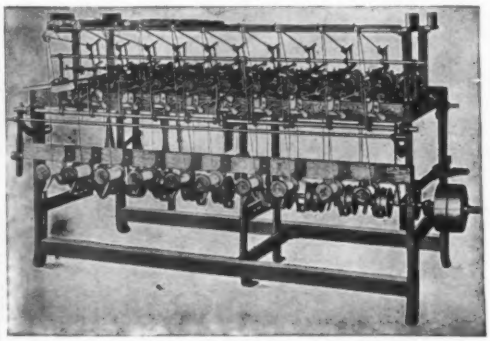
OSWALD LEVER CO.

(Formerly LEVER & GRUNDY.)

Lehigh Ave. and Mascher Sts., PHILADELPHIA, PA.

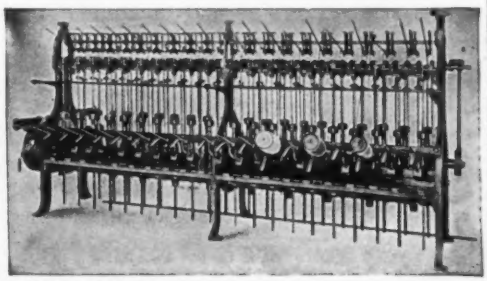
MANUFACTURERS OF TEXTILE MACHINERY.

SOLE MAKERS OF OUR PATENTED SPECIALTIES IN THE UNITED STATES.

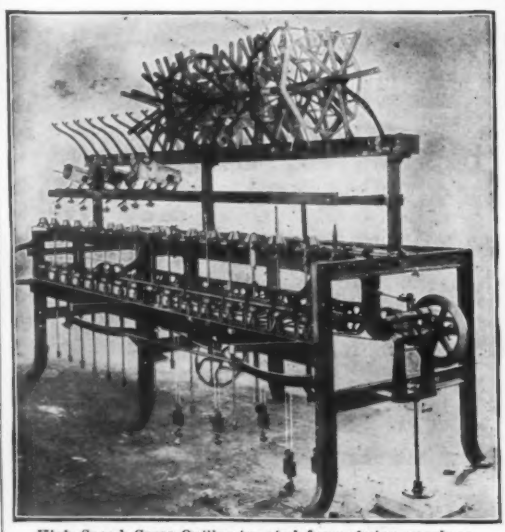


This Machine may be arranged to wind from skeins, spools, cones, or any kind of spinning bobbins. Most suitable machine for cotton or woolen blankets.

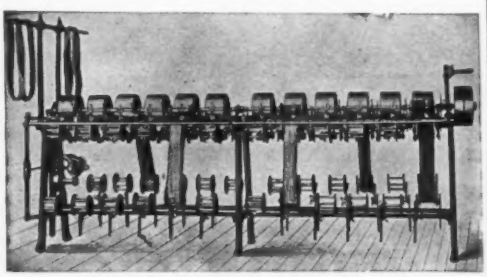
Conical and Parallel Tube Winding Machines; Warping Machines and Creels; Brass Bobbin Winding and other Machinery for lace mills; Chenille Cutting Machines, Sectional Warping Mill, Beaming Machines, etc; Cop Winding Machines for butts to weave from outside; Filling Bobbin or Quill Winding Machines; Vertical Spindle Spooling Machine for silk, fine cotton, wool and worsted; Variable Speed Bobbin Machines for large bobbins used in knitting mills; Dresser Spooling Machines; Reeling Machines.



Vertical Spindle Gear Driven Winder, as used by all manufacturers of heavy duck, jute, cotton, bagging and carpets.



High Speed Cross Quiller to wind from skeins, spools or mule cops on two quills or paper tubes. It is built to run from 1800 to 2400 revolutions.



Pressure Drum Spooling Machine. This machine is adapted for spooling any kind of yarn, whether from mule cops or skeins.

JAMES HUNTER MACHINE CO.

NORTH ADAMS, MASS., U. S. A.

Crabbing Machine. *Bulletin 70*

The Hunter CRABBING MACHINE

A COMBINATION machine permitting the Crabbing of goods by the Intermittent or Continuous process.

Two machines in one.

Either process of Crabbing may be used to the exclusion of the other, or both systems may be applied to the same piece.

This machine developes the pattern.

It imparts luster and sets the weave.

It prevents wrinkling or cockling and gives softness yet firmness to the fabric.

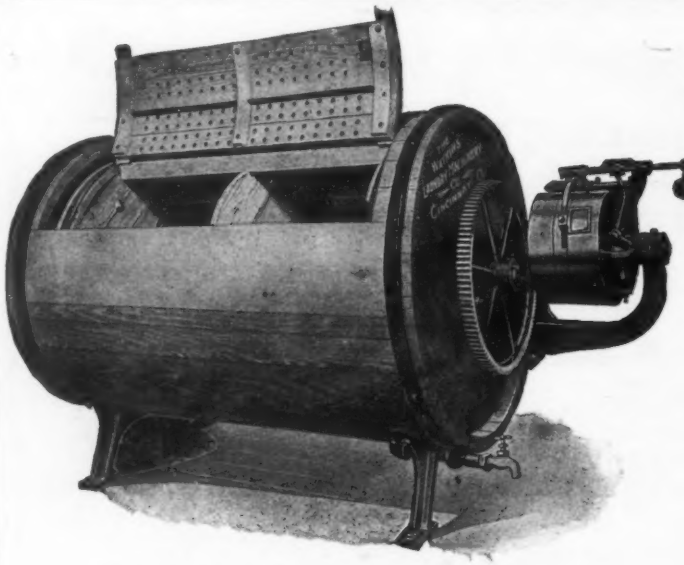
It makes cloudy goods impossible, brightens colors and imparts an absolutely uniform finish that can be duplicated.

For Resist Dyes it is a wonder.

It produces no seconds but goods that sell.

It is for progressive manufacturers who are only satisfied with the best.

Bulletin 70 fully describes it.



Washing Machines

for

Textile and Hosiery Mills

all styles and sizes.

No matter what your needs may be, we can supply you from our line.
Address our nearest office.

Hydro Extractors

all styles

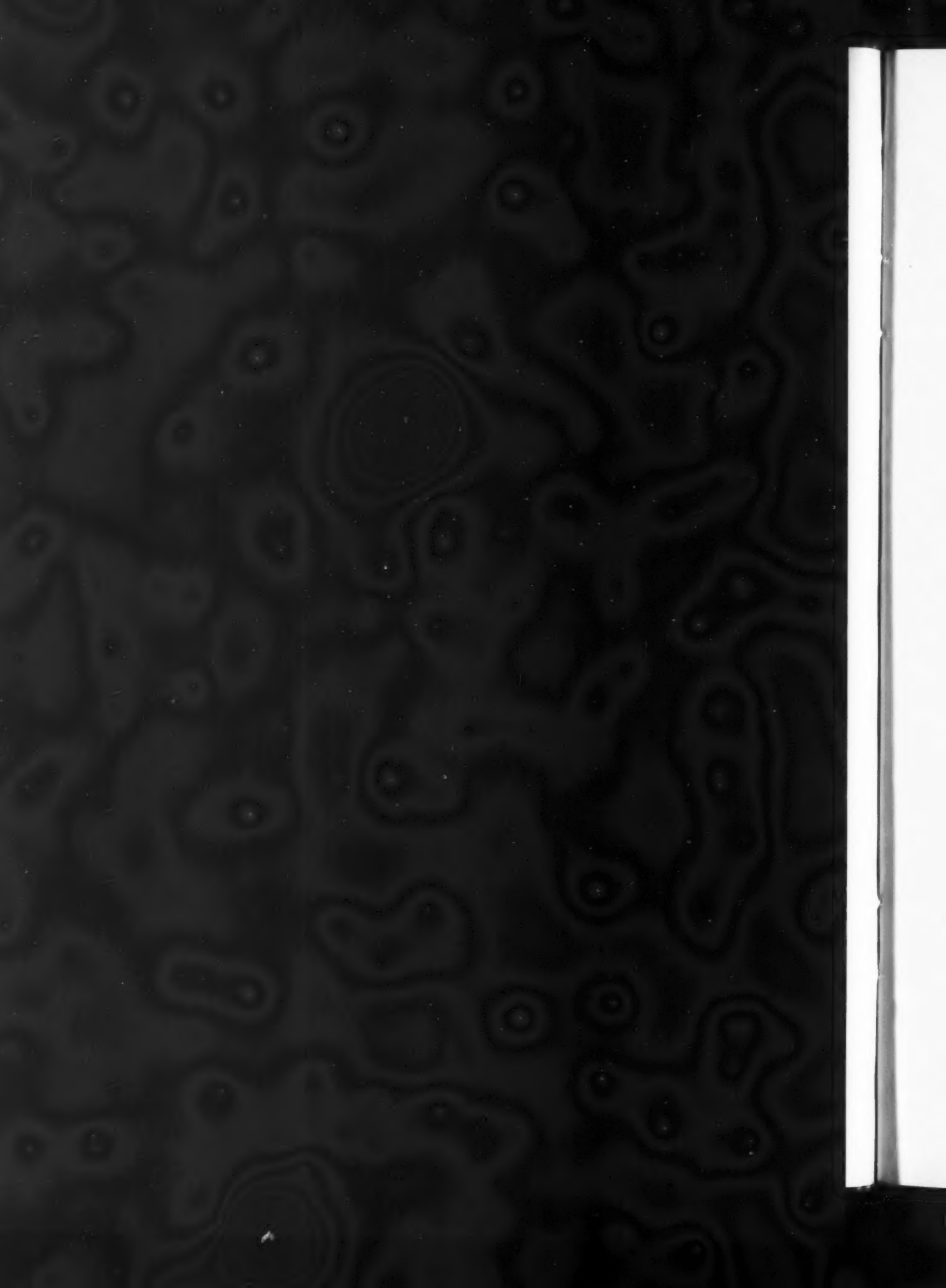
Under-Driven Extractors

Over-Driven Extractors

Motor-Driven Extractors

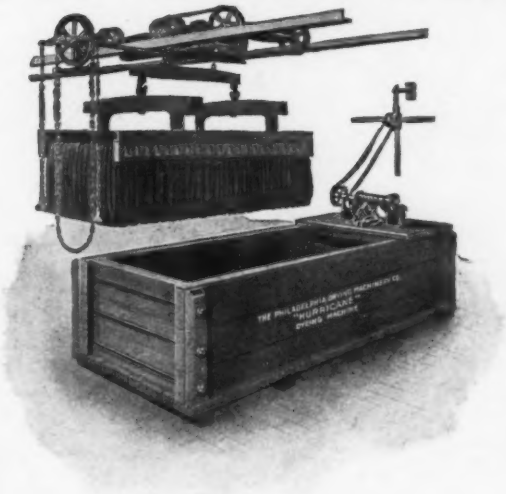
The American Laundry Machinery Mfg Co

Western Division	Eastern Division	Southern Division
78-80 Franklin St.	132-138 W. 27th St.	Station "H"
Chicago	New York	Cincinnati



SAVE IN DYEING

75% in Labor
50% " Steam
35% " Dyes



"HURRICANE"
Circulating Dyeing Machines
For Yarn, Hosiery, Etc.

Are in a Class by Themselves.

FOR HOSIERY,
SINGEING
WITHOUT BOARDS,— COSTS LESS THAN HALF

What you have paid heretofore.

THERE'S A REASON

FOR USING

"Hurricane" Automatic Singeing Machines

Power Screw and Hydraulic

PRESSES

For Hot or Cold Finishing, make higher prices possible on account of the better finish of the goods.

THE PHILADELPHIA DRYING MACHINERY COMPANY
"Hurricane" Dyeing, Drying and Finishing Machinery

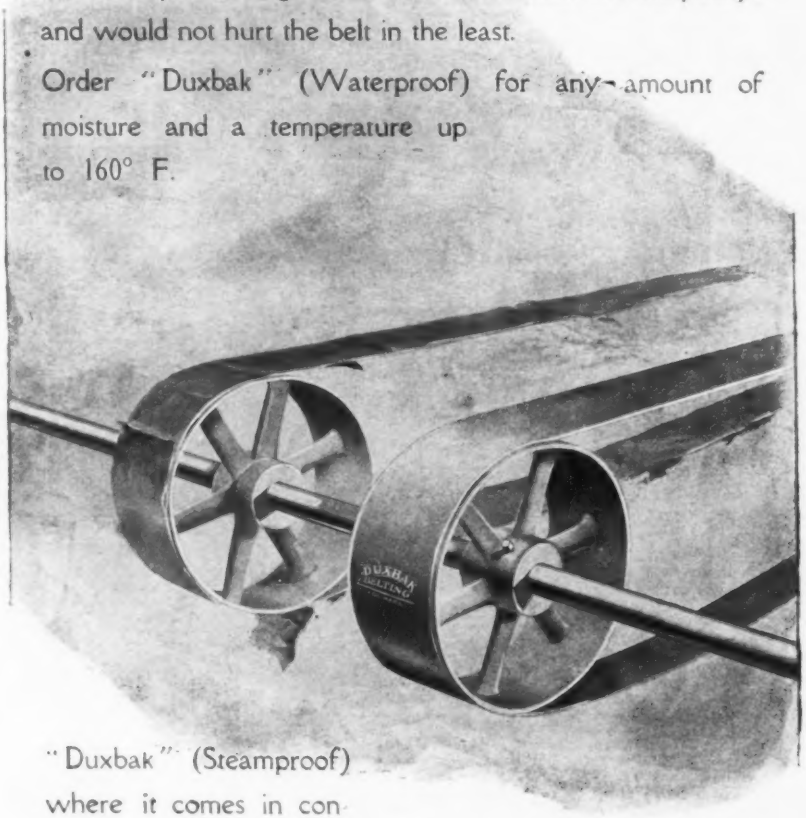
Complete Equipments for Scouring, Bleaching, Carbonizing, Etc.

6721 Germantown Ave., Philadelphia, Pa.

THERE may come a time when your belting is subjected to moisture that loosens the joints and destroys ordinary belting.

If you use Schieren's Duxbak Leather Belting, that moisture would only tend to give the belt more suction on the pulleys and would not hurt the belt in the least.

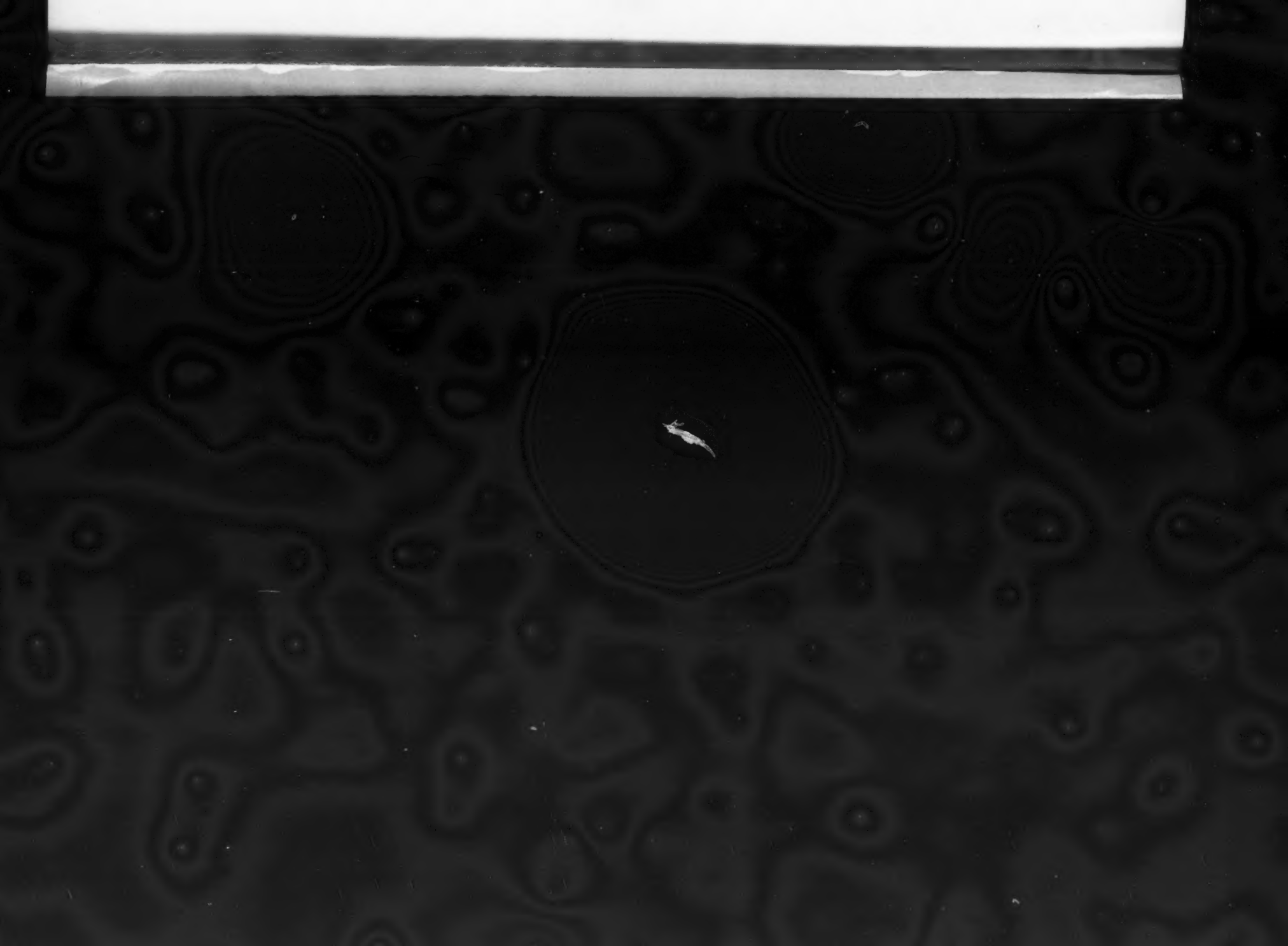
Order "Duxbak" (Waterproof) for any amount of moisture and a temperature up to 160° F.



"Duxbak" (Steamproof) where it comes in contact with boiling hot water or live steam.

Chas. A. Schieren Company
ESTABLISHED 1868
TANNERS
BELT MANUFACTURERS

NEW YORK, 30-38 Ferry St.
PHILADELPHIA, 226 North 3d St.
CHICAGO, 84-86-88 Franklin St.
BOSTON, 641 and 643 Atlantic Ave., opp. South Station.
PITTSBURG, 240 Third Ave.
DENVER, 1622 Wazee St.
BROOKLYN, N.Y., cor. 13th St. and 3d Ave.
HAMBURG, GERMANY, Auf dem Sande 1.
OAK LEATHER TANNERIES, Bristol, Tenn.



Thos. Leyland & Company

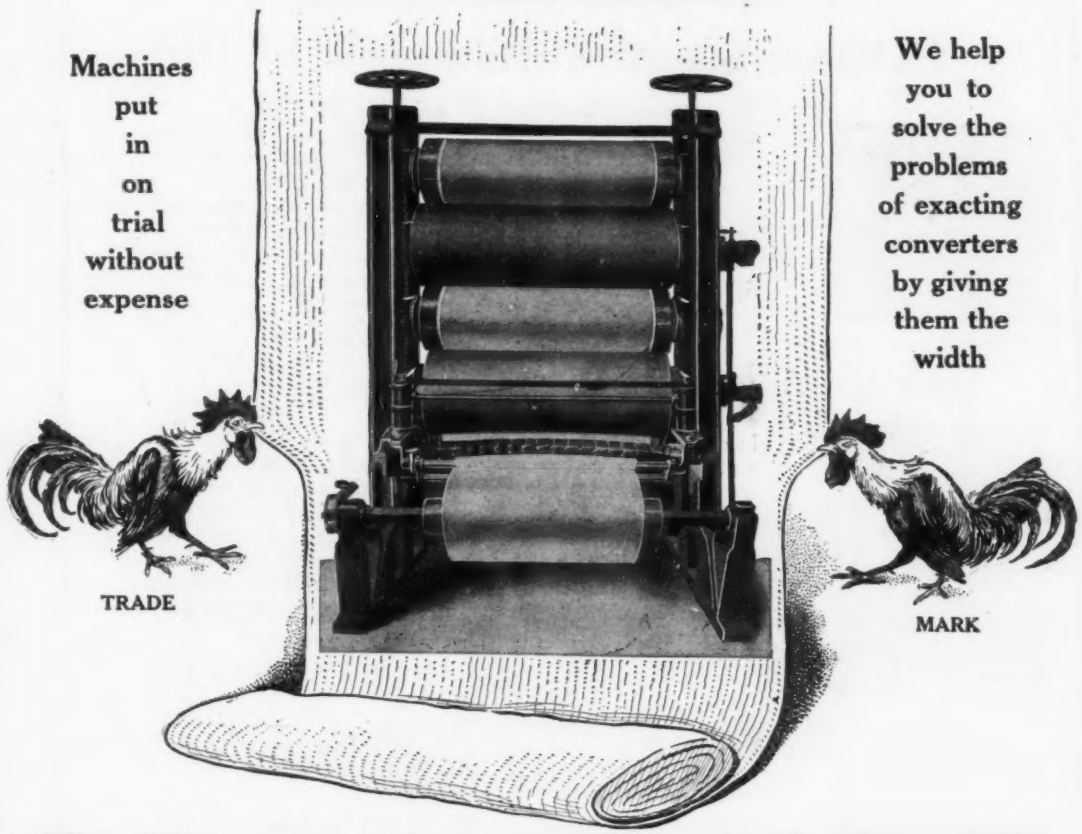
F. T. WALSH, Manager

60 India Street, Boston, Mass.

Gums, Dextrines, Corn, Wheat & Potato Starches

Soluble Starches, Softeners, Etc.

Machines put in on trial without expense

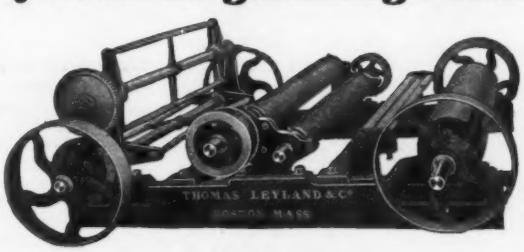


We help you to solve the problems of exacting converters by giving them the width

TRADE MARK

The Wm. Mycock Regulating Cloth Expander

Sole Manufacturers under The Mycock Patents



We are becoming experts in this line. Prove us

Improved Free Running, Solid Brass Scroll Cloth Scutchers

General Electric Company

Textile Mill Economics

Exhaust Steam Turbines—

in the power house afford a highly efficient means of utilizing the exhaust steam from reciprocating engines. Curtis Low Pressure Turbines utilize exhaust steam from 1 pound gauge pressure to any obtainable vacuum, and will add from 30 to 100 per cent to the station output without using additional fuel. These turbines are available in standard sizes from 300 kilowatts up and possess the same characteristics of operation that have made the Curtis Steam Turbine the peerless prime mover.

Induction Motors—

in the mill result in reduced operating and maintenance costs, besides increasing the output and quality of the product. Reduced building expenses and increased working space also follow as direct results of the adoption of electric drive. This is due to the elimination of heavy and bulky line shafting and the consequent lighter construction materials required. Of the total power supplied through electric motors to textile mills in this country, 75 per cent. is delivered by G. E. motors. There's a reason.

Tungsten Lamps—

in every part of the mill will give you the same amount of illumination as ordinary incandescent lamps, but will use only one-third as much current. If you want to get more light without increasing your light bill, or if you want to relieve your overloaded lighting plant, G. E. Tungstens will help you. Furthermore, the quality of the light given by G. E. Tungstens is almost equal to daylight—the ideal light for textile mills. These are good points to remember when you are considering the lighting question.

Mill Power Dept.
84 State St.
BOSTON, MASS.

Principal Office:
SCHENECTADY, N. Y.

Sales Offices in All Large Cities

1994

American Textile Specialty Machinery Co.

670 Eddy St., Providence, R. I.

MANUFACTURERS OF

SHUTTLES AND SHUTTLE IRONS

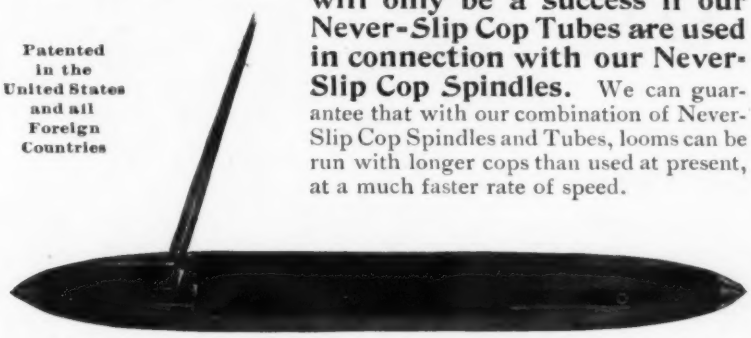
FOR ALL TEXTILE PURPOSES

Never-Slip Cop Tube

Patent applied for.

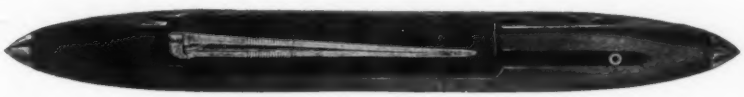
Filling-Waste is reduced to nothing and long Cops will only be a success if our Never-Slip Cop Tubes are used in connection with our Never-Slip Cop Spindles. We can guarantee that with our combination of Never-Slip Cop Spindles and Tubes, looms can be run with longer cops than used at present, at a much faster rate of speed.

Patented in the United States and all Foreign Countries



Shuttle with Spindle Raised

U. S. Patents: 778851, Jan. 3, 1905; 790611, May 23, 1905; other patents pending



Shuttle with Spindle Lowered

U. S. Patents; 778851, Jan. 3, 1905; 790611, May 23, 1905; other patents pending

We also manufacture a complete line of

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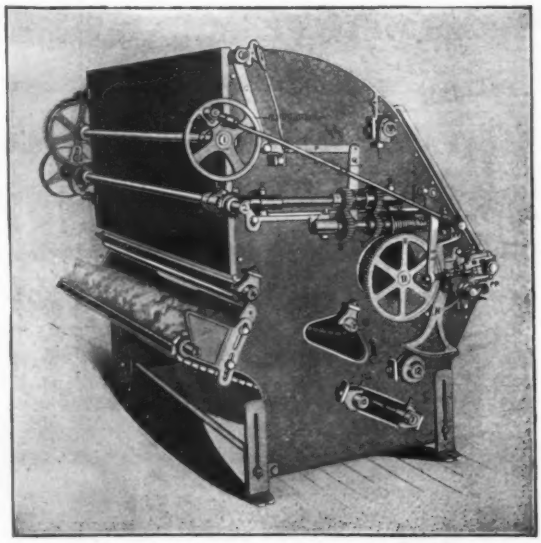

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Woonsocket Machine and Press Company

WOONSOCKET, R. I.

ESTABLISHED 1865

Jacob K. Altemus

Office: 2824 North 4th St., Philadelphia, Pa.

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Makes a specialty of machinery for

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Our new machine for Rewinding Yarn onto Shuttle Bobbins puts on from 20 to 300 per cent more yarn than before

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OF THE
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With the Turbo-Humidifier you can obtain a system of cleaning rooms and machinery by compressed air at little additional cost.

One actual case where complete equipment of humidifying and cleaning cost $3000.00 shows a saving of $1600.00 yearly in the cleaning feature alone.

These actual figures are secured by less cleaning payroll expense—**and a longer run** for the machinery.

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Southern Office: - - - - - - 1 Trust Building, Charlotte, N. C.
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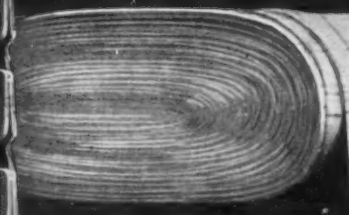

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Not affected by dampness or dryness.

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Will outwear cord, band or rope many times over.

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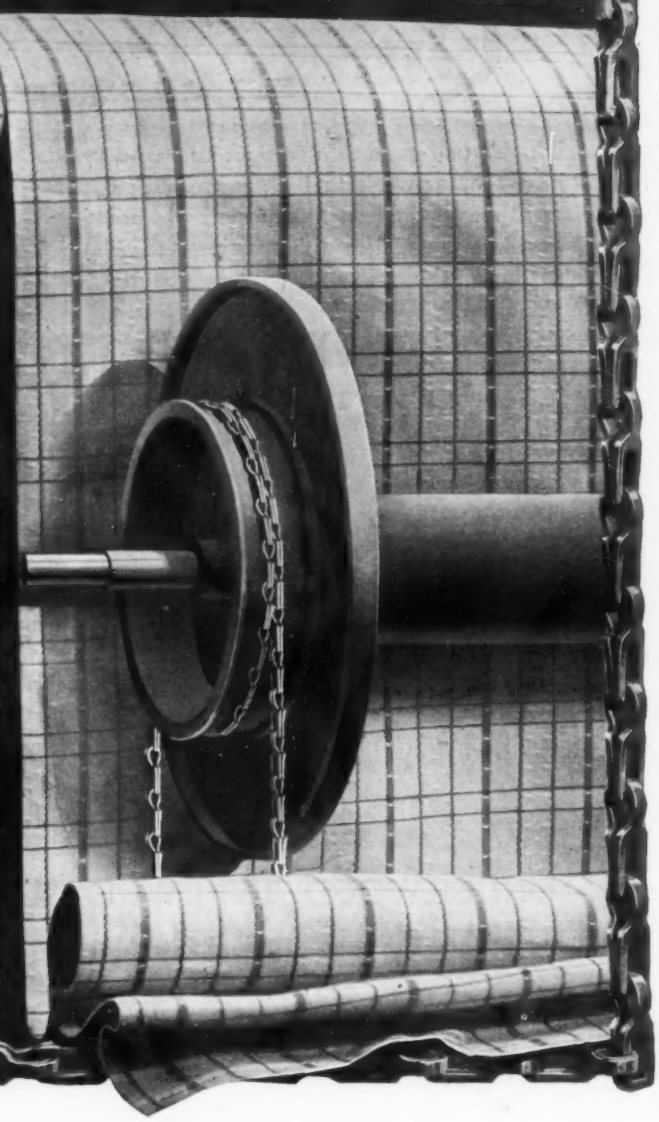

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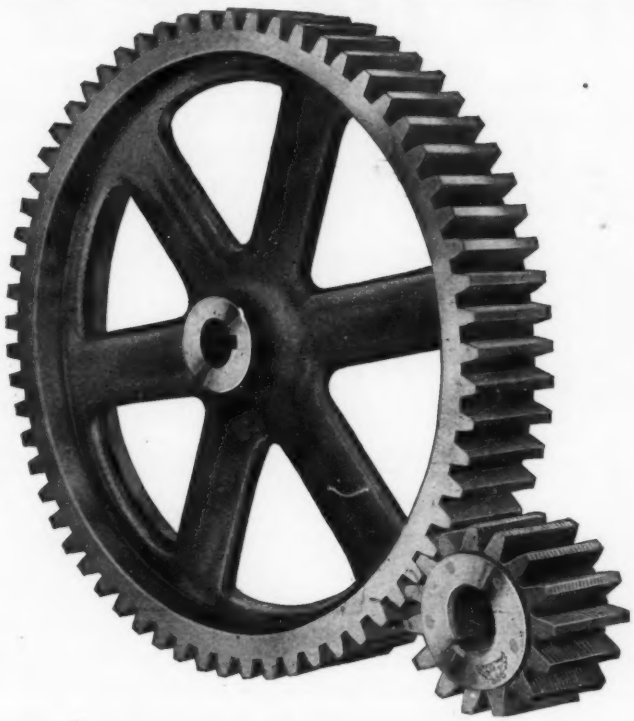

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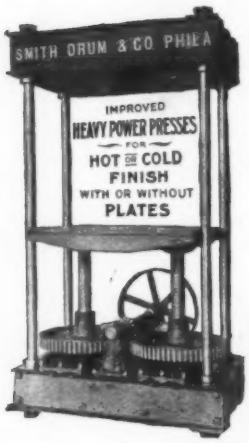

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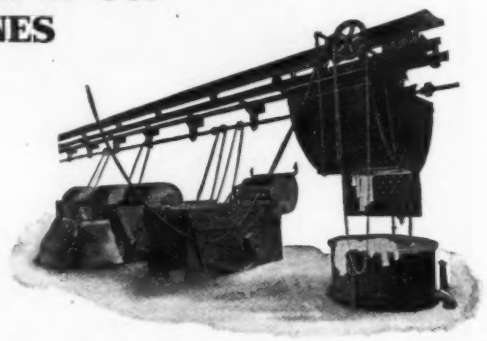

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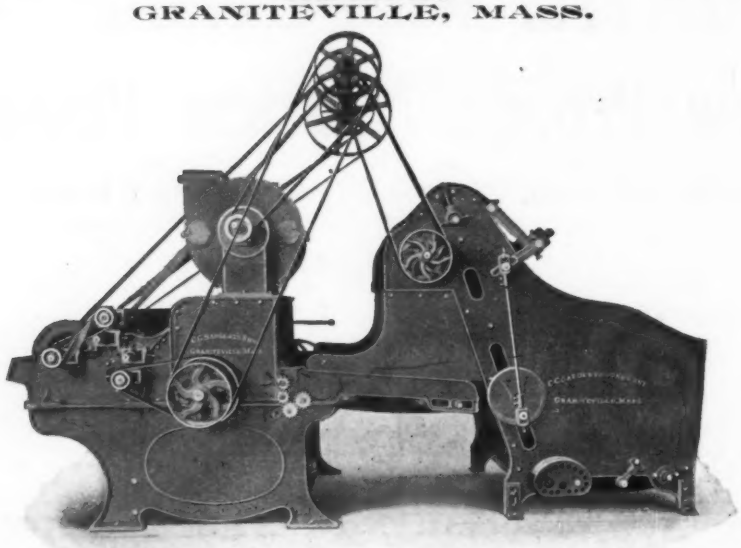

Multiplex Burr Picker and Self Feed.

The advantages of this Burr Picker are readily apparent to any practical mill man. It is the only Burr Picker having two guards, both of which knock the burrs out of the machine, and away from the approaching wool. Both surfaces of the lap of wool are cleaned. Our catalog tells more about it, shall we send it ?

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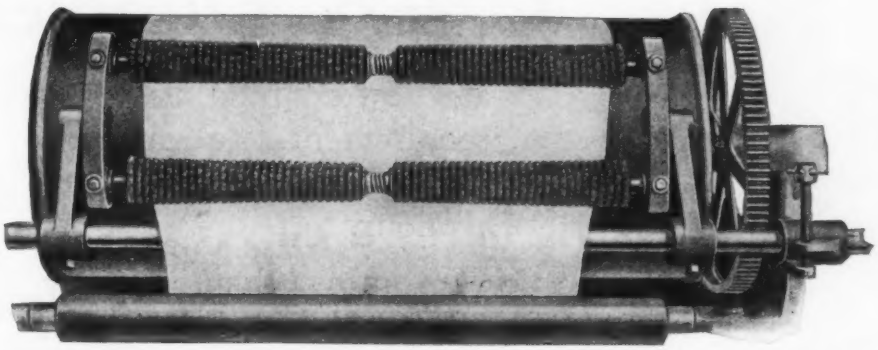
(Patented)



THE NEW PRINCIPLE FOR STRETCHING CLOTH

from the centre toward the selvedge. Each bristle catches a different thread of the fabric at the same time. A manufacturer whose name is famous the world over recently said of this stretcher: "It is the greatest invention in the line of finishing machinery since I have been in the business." ¶ GETS THE FULL WIDTH OF THE GOODS; stretches all classes of fabrics with equal efficiency. No dirt, grease, oil, or complications.

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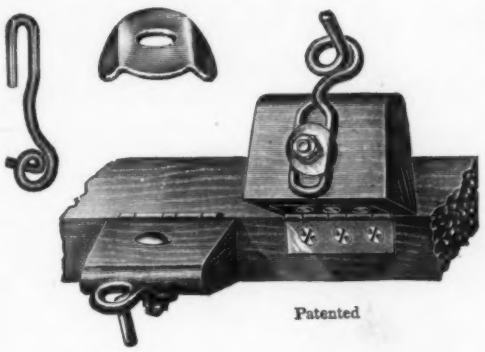
The accompanying illustration shows the **Palmer** adjustable thread guide for spinning and twisting. This guide is **Adjustable** in all directions and can be rigidly and permanently fixed. **Thread** boards and rails of metal which are expensive are not necessary with this **Guide**



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SEND two clappers for free samples for circular.

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Lays the fiber closer
Makes a smoother twist
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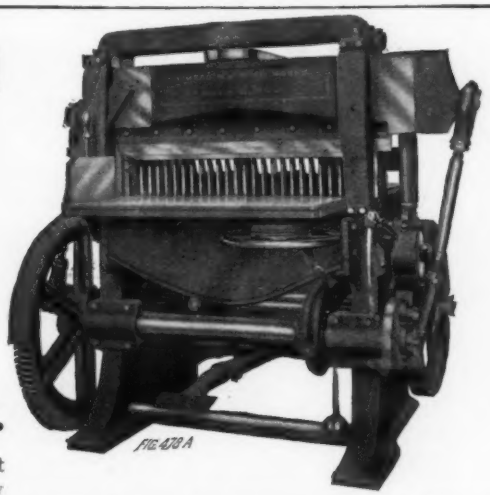
Pinking Cloth and Cutting Samples on Oswego Cutting Machines

is easy, quick, economical and correct.



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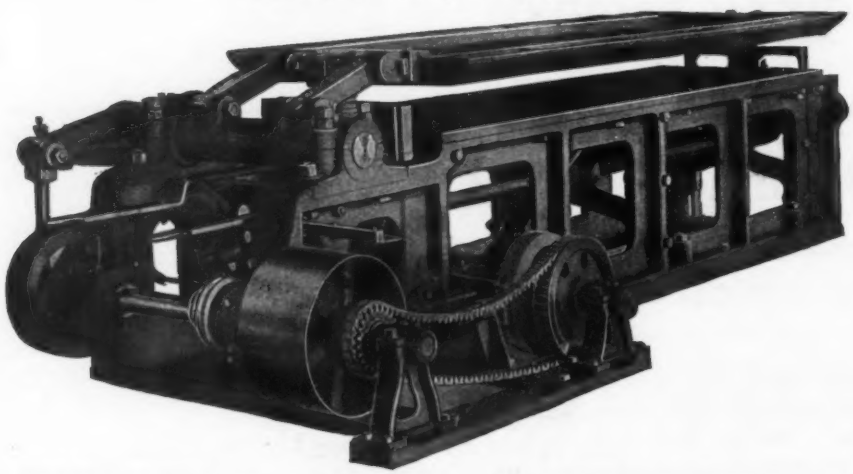

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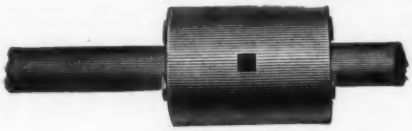

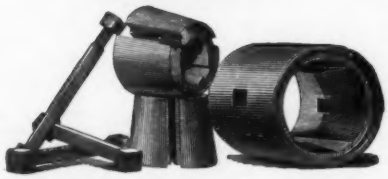

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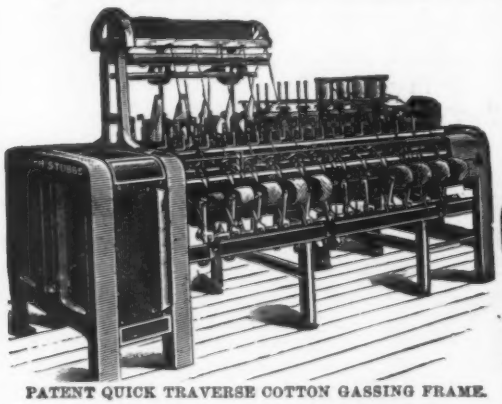

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IMPROVED RABBETH SPINDLE WINDER.
With Patent Tapering Motion, for Single Flanged Bobbins.

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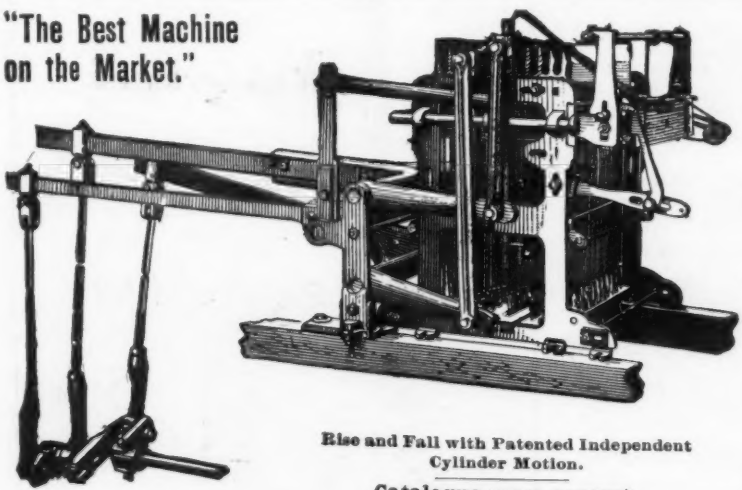

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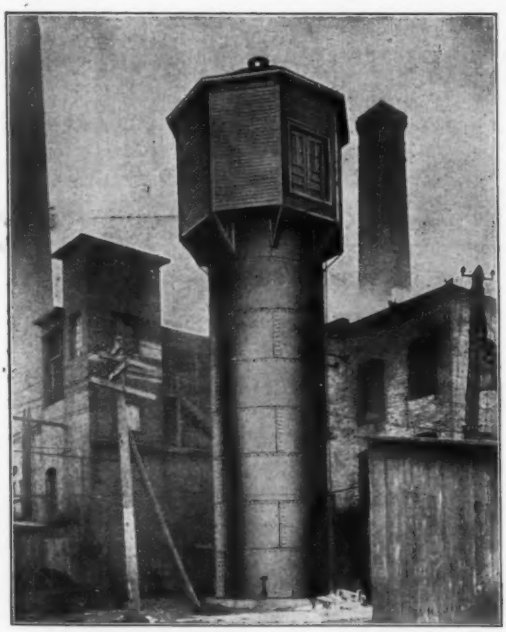

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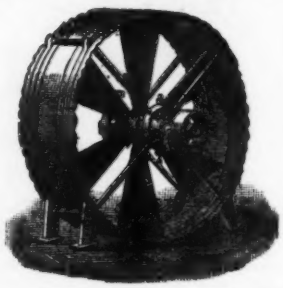

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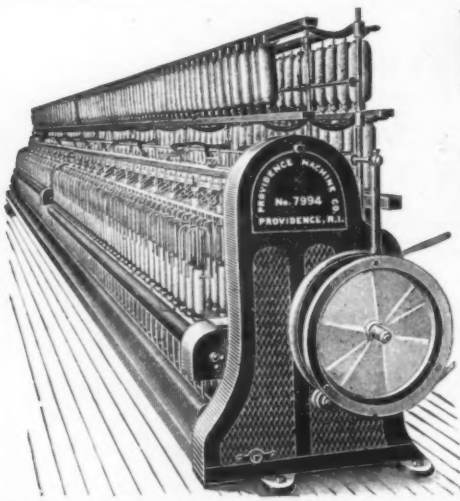

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OPERATED WITH LEASE OR WITHOUT.
POSSESSES LARGE RANGE OF ADJUSTMENT.
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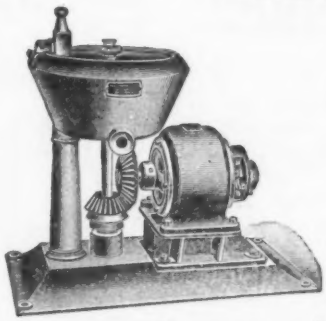

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Separates oil from bolts, nuts, and scraps of all kind—oil that would otherwise be wasted, and makes it as good as it ever was, for further use. **Send for Catalogue.**

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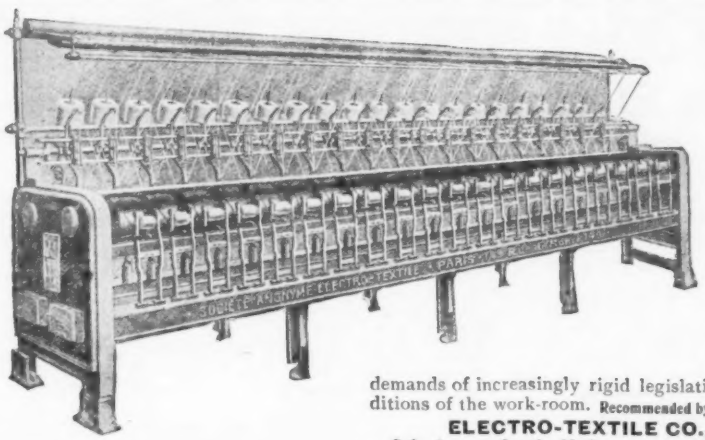

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We lower yourcost of production from 30 to 60%

We produce yarns of finer quality.

We produce yarns of better color.

We give you cleaner, safer work-rooms.

Simple to operate.

The only machine that allows manufacturers to meet the demands of increasingly rigid legislation controlling the health conditions of the work-room. **Recommended by the Commissioners of Labor in France.**

ELECTRO-TEXTILE CO., PARIS, FRANCE.

Sole Agency for the U. S. - - 136 Liberty St., New York City.

Electrical Installations

In Textile Mills is Our Specialty

15 Years Experience Highest References

MODERN LIGHTING SYSTEMS

EFFICIENT POWER PLANTS

RECONSTRUCTION OF OLD PLANTS

Watson-Flagg Engineering Company

Contracting Engineers

Paterson, N. J. New York, N. Y.

WILSON & CO., BARNSLEY, Limited

BARNSLEY, ENGLAND.

Absolutely secure combination of Shield and Bobbin guaranteed.

Loose Shields Impossible.

Specialties: PATENT "LOCKFAST" and "CLIMAX" Shields. ENAMELLED CONDITIONING BOBBINS, Impervious to Steam, Moisture or Oil.

TRADE MARK.

GOLD MEDAL St. Louis, 1904. DIPLOMA d'Honneur Liege, 1905 Highest Awards for Bobbins.

Added Strength and Absolute Security.

Samples and Prices on Application.

SPEED & STEPHENSON, Agents for U. S., 170 Summer St., Boston, Mass.

"ANTI-PLUVIUS"

(Trade Mark)

Puttyless Skylights

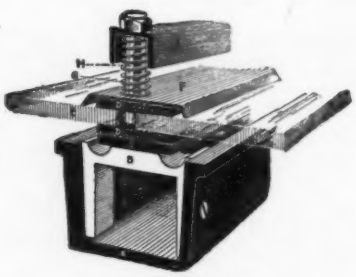
FOR

SAWTOOTH CONSTRUCTION

100,000 square feet now on order.

Do you know its merits? Its economical features? Its efficiency?

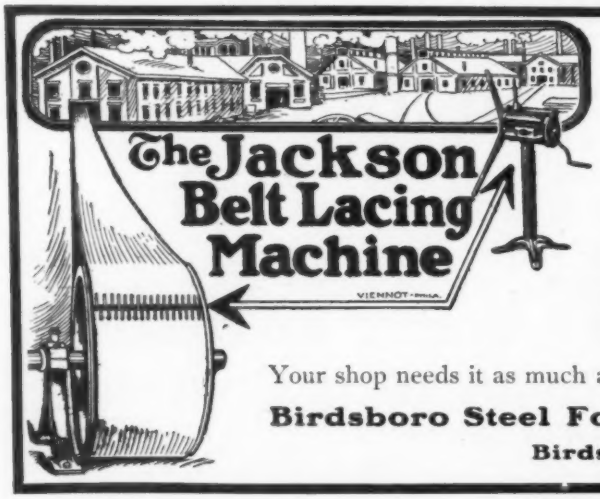
Let us send the details and a section



BAR DOES NOT SWEAT
NO DRIPPAGE

THE G. DROUVE COMPANY, Bridgeport, Conn.

CHICAGO OFFICE: 40 Dearborn Street



Is used in the U. S. Government shops, and by many of the largest and most up-to-date manufacturing concerns in this country.

The reason is simple and sufficient. Its use makes possible an important **saving of time.**

A 6 inch belt can be laced in 3 minutes at a cost for material of less than one cent, and the resulting connection is the best known.

Your shop needs it as much as others. Booklet free on request

Birdsboro Steel Foundry & Machine Co.

Birdsboro, Pa.

Foggy Dyehouses Cleared

A foggy dye house prevents perfect work or maximum production. Keep your product and your production up to the warm weather mark by installing

A BERRY WHEEL

How about your drying?

The Berry System is most Efficient and Economical for Drying. Send for Circular T.

A. Hun Berry, 23 West First St., Boston

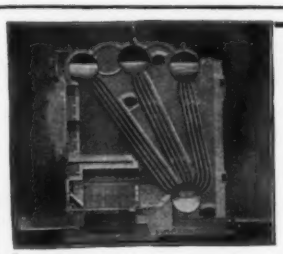
WILLIAM BODDEN & SON, Limited

The "BODDEN" Flyer

For QUALITY OF FINISH
For QUANTITY of PRODUCTION
HAS STOOD THE TEST OF YEARS

Sole Agents for U. S. A.

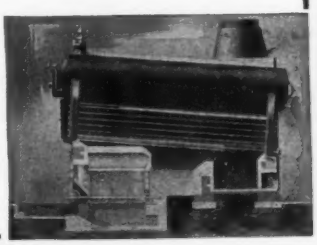
Thomas Mayor & Son, Olney Street, Providence, R. I.



The Murphy Automatic Smokeless Furnace

Burns Slack with Great Economy

The Murphy can be installed under any type of fire-tube or water-tube boiler and to units of any size.



SETTING UNDER TWO TYPES OF BOILERS SHOWN HEREWITH

MURPHY IRON WORKS

DETROIT, MICH.

"BRETON" OILS FOR WOOL

1880

Are adapted for all kinds of wool batching. Can be used on the most fugitive and delicate colors as the cleansing requires only a very mild soap. They do not gum the cards and make less card waste than Red oils. Send for a trial barrel, subject to test and approval.

BRETON OIL FOR WOOL TRADE-MARK

BORNE, SCRYMSER & COMPANY,

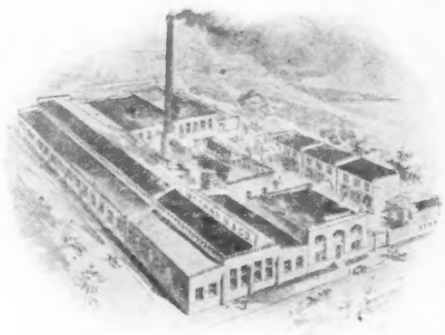
80 South Street, New York

Boston Fall River Philadelphia Works: Claremont, N. J.

1909

WILLIAM CRABB & CO.

Bagging Loom Reeds
Cotton Banding
Card Clothing in Leather
Card Clothing in Wood
Card Pins
Circles
Comber Needles
Comb Pins
Drawing Frame Pins
Fallers
Feed Rollers in Brass Shells
Gill Brass



Gills and Gill Bars
Hackles
Hackle Pins
Jennie Pins
Needle Pointed Pins
Picker Teeth
Porcupines
Rivets
Rotary Gills
Spreader Pins
Steel Springs
Steel Wire
Tentering Pins
Waste Machine Clothing and Teeth
Weavers' Combs

NEWARK, N. J.

FIG.22.
Round Basket with renewable hard wood Shoes.

The Lane Patent Steel Frame Canvas Mill Basket.

Perfectly adapted materials and a practical common sense way of putting them together, are features which make the Lane Basket so pre-eminently superior to others, for the various uses of a textile mill.

It is the original Canvas Basket and embodies desirable features which are patented and will not be found in any other basket.

Full illustrated Catalog No. 37 with discounts on application.

W. T. LANE & BROTHER,

Manufacturers,

SOLD BY PRINCIPAL SUPPLY HOUSES

POUGHKEEPSIE, N. Y.

3 Necessities

FOR EVERY

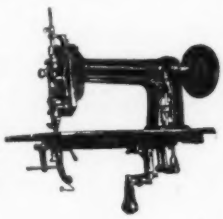
Textile Manufacturer

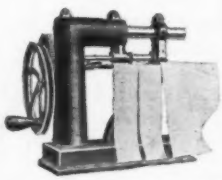
D & H 4207

Counter for registering picks, or production, yards or pieces.

L & E
No. 1--1000

Numbering Machine for numbering and marking piece goods for identification.



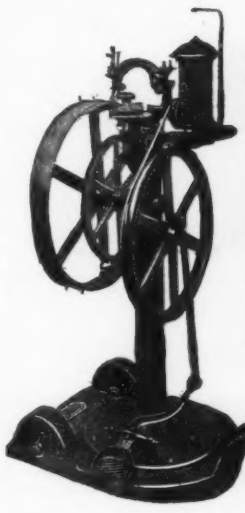


D & H No. 9

Sample Cutting Machine for pinking samples. The modern time and money saving way.

The Durbrow & Hearne Mfg Co.
12 Wooster St., NEW YORK.

DINSMORE



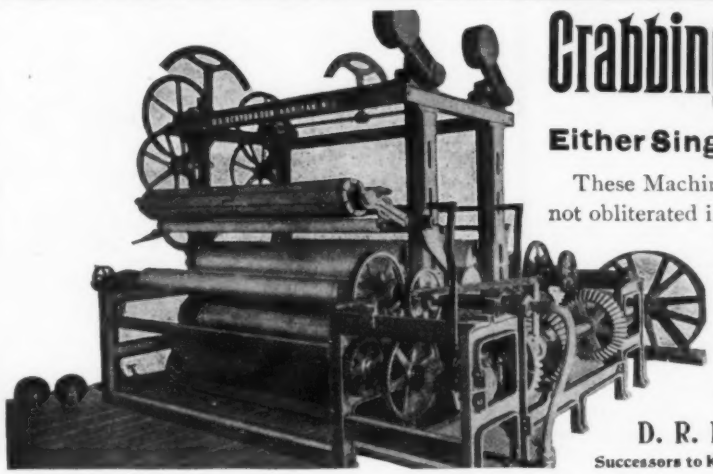
Mill Sewing Machines

No. 9.—Portable Foot-Power Rotary Sewing Machine

It is especially adapted for use in Cotton and Woolen Mills, Bleacheries, Print Works at the Printing Machines, in Dye Works, Cloth Rooms, at the Fulling Mill, Shears, Calendars, Gigs, Drying Machines, etc., or any of the different finishing processes in textile mills.

Manufactured by the

DINSMORE MANUFACTURING CO.,
Salem, Mass., U. S. A.



Crabbing Machines

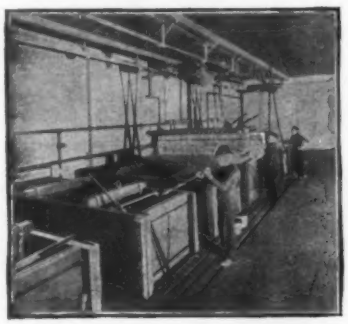
Either Single, Double or Triple

These Machines set the weave so that it is not obliterated in subsequent processes, prevent felting, take out all wrinkles and cloudiness, and will do much more work with less labor than the old style crab. Can be used before or after singeing.

D. R. Kenyon & Son, Raritan, N. J.
Successors to Kenyon Bros. Tel. Somerville 21

Waters' Dyeing Machine

This cut shows a new and useful machine patented by D. F. Waters for the dyeing of any color on Worsted, Woolen, Cotton and Merino Yarns.



Being successfully operated by some of the largest manufacturers in the country.
The saving of labor will more than pay for a machine in a few months.
Capacity; 2,000 lbs. a day per man.
Machine can be seen in operation at any time at my plant where I have 13 in operation all the time.

D. F. WATERS,
53 and 55 Wister St., GERMANTOWN,
PHILADELPHIA, PA.

We have the Largest Exclusive Spool Manufacturing Plant in the World with a capacity of 10,000 High Grade Bushed Spools per day.

Our splendid facilities guarantee prompt and immediate deliveries. Our equipment, than which no better exists, guarantees the highest grade of all hard wood spools of the highest quality procurable at medium prices.

COTTON WARPER SPOOLS, COTTON TWISTER SPOOLS,
WORSTED ROVE SPOOLS, CARPET CREEL SPOOLS,
WORSTED REDUCER SPOOLS,
WOOL WARP SPOOLS.

We can give one week deliveries on any order of the above kinds of spools.

Lestershire Spool & Manufacturing Co.,
LESTERSHIRE, N. Y.

You can have these Free

If You Have Trouble With Your Belting

or know of a shop or power plant where the belts are not acting right, let us know and we will send you free samples of Shultz Belting Cement and Shultz Belt Dressing.

Simply write us a postal stating where and how the belts give trouble.

Ask about our "Aqua" Rawhide Belting, for use in damp places, etc.

Shultz Belting Co.,
St. Louis, Mo.
New York Boston Philadelphia

TANKS and VATS

Cedar, Cypress and Pine

For Dyers, Bleachers, Tanneries and General Factory Purposes.

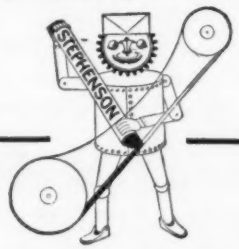
Reservoir Tanks
Sprinkler Tanks
Special Tubs and Vats

Steel Towers

For Elevating Tanks to any Height.

New England Tank and Tower Co.
112 High Street, Boston, Mass.

"The After Effects Are Pleasant."



If Quality Counts

and ***Results*** are what you want, refuse to accept a cheap substitute, and insist that your Dealer gives you the kind of ***STEPHENSON Bar Belt Dressing*** that is made for your particular belts. Be sure the ***Man with the Cog-Wheel Face is on each Pound Stick.*** And don't confuse the Brands.

RED Label Brand for Leather Belts
GREEN Label Brand for Rubber Belts

Stephenson Mfg. Co., Albany, N.Y.

Write for sample of STEPHENSON Belt Cleaner.

Cooper Hewitt Lamps

are better than daylight for lighting textile mills.

Under Cooper Hewitt light each particluar fibre of the material stands out distinctly. The effect is as though objects were magnified. It increases the efficiency of the operator 15 to 20 per cent. The cost for current is half that for arcs or tungstens, one-fifth that for incandescents.

Estimates and proposals showing light, cost of current and maintenance for any plant furnished free.

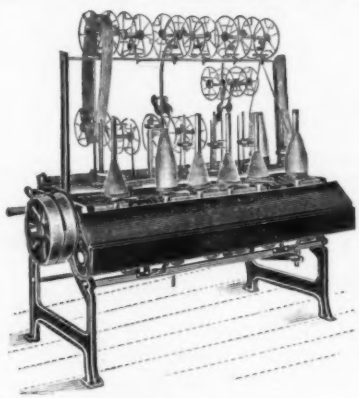
Cooper Hewitt Electric Co.

220 West 29th St., New York.

A. W. ALLEN

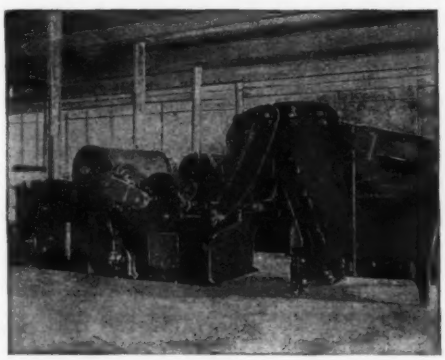
2427 Mascher St., Phila.

WINDERS



6 SPINDLES UP

The best winder on the market. If you are not using one or more try one.



Westinghouse Individual-Motor Driven Picker with Automatic Feeder.

With a Westinghouse Textile Motor attached to and forming part of the picker

the overhead shaft with its belts and pulleys are eliminated. A Morse silent chain connects the motor to the beater shaft giving a positive action without slip, and a nniform maximum speed at all times, consequently a maximum output.

Other advantages of this Drive are explained in

Textile Motor Talks No. 4

Ask for a copy to-day.

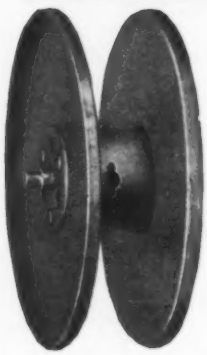
Westinghouse Electric & Mfg. Co.

Atlanta **Charlotte** **Philadelphia**
Boston **New York** **and other large cities**

Rapid, Legible Trade-Marking

The Kaumagraph Method of Textile Stamping is the most rapid on the market to-day—at the same time insuring clean legible results **every time** on **any** fabric.

KAUMAGRAPH COMPANY
156 Fifth Avenue, New York



Clean your shop of Dead Wood and Breakable Cast Iron

Be progressive and economical use

Stamped Steel Beams

(Patented)

FRANK MOSSBERG CO., Attleboro, Mass.

See our Reel, Spool and Beam Catalogue.

There are many articles advertised to do the work of

Carbolineum—but have you ever tried

AVENARIUS CARBOLINEUM

"It preserves wood against rot."
On the market since 1875.

Carbolineum Wood Preserving Co.
347 West Broadway, New York, N. Y.

THE PROOF OF THE PUDDING IS IN THE EATING.

The Best That Money Can Buy

SPINNING RINGS.
TWISTER RINGS.
RING HOLDERS.
TRAVELER CUPS.
SILK RINGS.
TRAVELER CLEANERS.

Correspondence Solicited.

WHITINSVILLE SPINNING RING CO.,
WHITINSVILLE, MASS., U. S. A.

A. H. HOWARD, Pres. ESTABLISHED 1866. HERBERT MIDGLEY, Supt.

A practical test will convince you we can furnish the

BEST
COTTON, WOOLEN and WORSTED
CARD CLOTHING

Howard Bros. Mfg. Co.

144 and 146 Vine Street, WORCESTER, MASS.

To the Manufacturer who Invites Success!

THE HENDERSON CARD

will increase your carding and improve the quality of your yarn with less waste, greater strength and increased production over any other system.

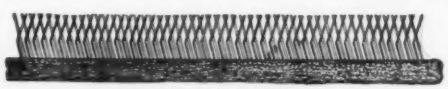
James H. Whittle Co. 150 Harlow St., Worcester, Mass.

Successors to the Cleveland Machine Works

Owners and manufacturers of the celebrated **Henderson Card** for Wool, Worsted, Cotton, Waste, Flax and Asbestos. Also manufacturers of

All Kinds of Woolen Machinery.

Bates & Robinson



Patented Dec. 1908

Combination Card Clothing Which makes workers out of the strippers.

Thousands of these combination strippers running in the best mills in America.

Bates & Robinson Machine Co.

148 Warren Street, LOWELL, MASS.

The equipment of the Clark Thread Mills with **C-W** squirrel cage motors is a sign of the times.

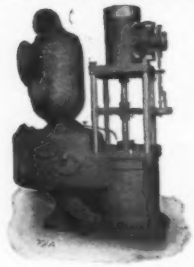
Our bulletin 105 Y describes this motor.

Crocker-Wheeler Company, Ampere, N. J.

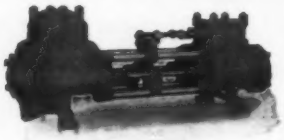
DEAN BROS. STEAM PUMP WORKS

INDIANAPOLIS, IND.

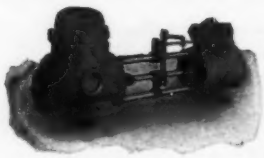
DUPLEX PUMPS, SIMPLE PUMPS
ATLANTIC BOILER FEEDERS
JET AND SURFACE **CONDENSERS** ELECTRIC PUMPS BELTED PUMPS, Etc.



VERTICAL AIR PUMP AND JET CONDENSER

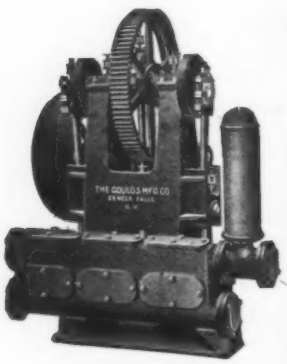


DUPLEX DURABLE PUMP



SIMPLE PUMP

TWIN AIR PUMP AND CONDENSER



GOULDS EFFICIENT POWER PUMPS

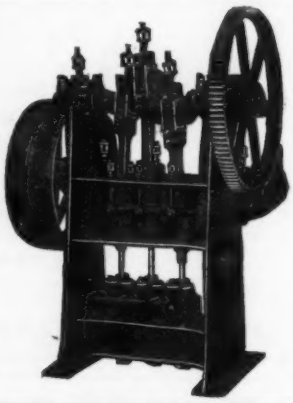
FOR EVERY SERVICE

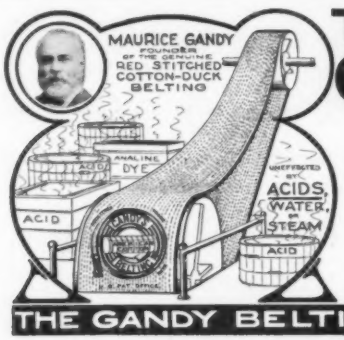
Are by far more economical in operation than a steam pump for boiler-feeding, mines, vacuum, hydraulic pressure and water works. Let us send you catalog.

THE GOULDS MFG. CO.

Seneca Falls, N. Y.

New York Boston Pittsburg St. Louis Chicago Philadelphia New Orleans
Los Angeles San Francisco Louisville





THE GENUINE GANDY

Textile Manufacturers

need belts to successfully withstand moisture and acid fumes of dyeing and bleaching rooms.

The **Gandy Red Stitched Cotton Duck Belt** is just exactly that kind of a belt.

Runs straight and true; runs slack without slipping; costs but ½ as much as leather, ¼ as much as rubber and outlasts either.

Write for free booklet.

(*Good for any belt, Gandy Belt Dressing.*)

THE GANDY BELTING CO. BALTIMORE, MD.

NEW ENGLAND BUTT COMPANY,

304 PEARL ST., PROVIDENCE, R. I.

BRAIDING MACHINERY

ALL STYLES AND KINDS FOR FLAT AND ROUND BRAIDS.

SOLID SASH AND CURTAIN CORDS,

SHOE AND CORSET LACES, BANDING

AND ALL BRAIDED FABRICS.

Improved Fulling Mills Washers & Dyeing Machines

Made by

Rodney Hunt Machine Co.

Boston Office, 70 Kilby St.

Works at Orange, Mass.

Send for Circulars

See Advt. of Water Turbines on page 254

JAMES H. CLARKE GEORGE B. COCKER

COCKER MACHINERY COMPANY

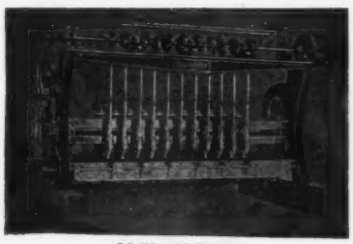
Improved Warping and Beaming Machinery

of all types for Cotton Textiles.

Improved Double Acting Nappers and Felters

For Cotton and Woolen Goods.

Frankford, Penna.



50-IN. MACHINE

L. F. FALES

MANUFACTURER AND BUILDER OF

SEWING MACHINES

FOR ALL PURPOSES WHERE A NUMBER OF ROWS OF SEAMS ARE REQUIRED

BUILT WITH ANY REQUIRED NUMBER OF NEEDLES

DESIGNER OF SPECIAL MACHINERY

WALPOLE, MASS. U. S. A.

PAPER SLITTING MACHINES

All Space Occupied

Cases, bales and packages piled tier upon tier easily and quickly. The Economy Steel Tiering Machine will increase the capacity of your storage room, give instant accessibility to any of the goods, and decrease cost of handling.

Each Case In Place

Put there with ease and economy, it does away with the old laborious hand method. The Economy Steel Tiering Machine enables a small man to lift a large load and put it where he wants it.

Economy Engineering Co. 58-64 N. Jefferson St. Chicago, Ill

Established 1870

John Heathcote & Son

Providence, R. I.

Builders of Improved

Cloth Tentering and Drying Machinery

for WOOLENS, WORSTEDS, FELTS, etc.

Built Upright or Horizontal with Low Down Feed

Ventilating Fans a Specialty

Send for Catalogue

DIXON PATENT STIRRUP ADJUSTING SADDLE

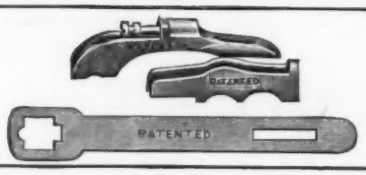
1,200,000 pairs now in use

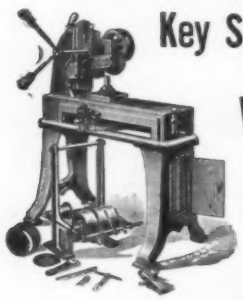
Best Saddle for Top Rolls of Spinning Frames

Send for Samples

DIXON LUBRICATING SADDLE CO., Bristol, R. I.

Manufacturers of all kinds of Saddles, Stirrups and Levers

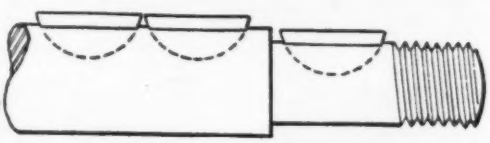




Key Seating Attachment

FOR

Whiton Gear Cutter



We offer an attachment for use with our Gear Cutting Machine, to cut key seats for the Woodruff System of Keying. Write for description, circulars and price.

THE D. E. WHITON MACHINE CO.,

19 Oak Street, New London, Conn.

Get Your Supplies from the Manufacturers.

EXCELSIOR WOOL OIL COMPOUND AND COTTON SOFTENER

Established 1841

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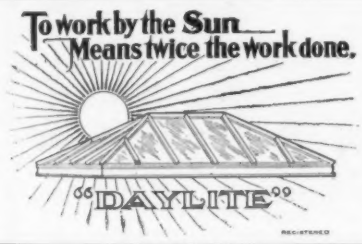

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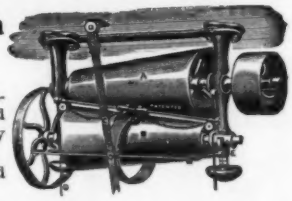

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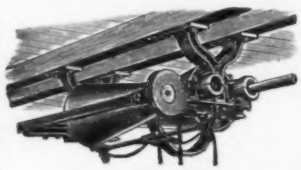

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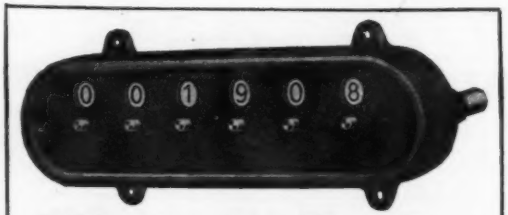

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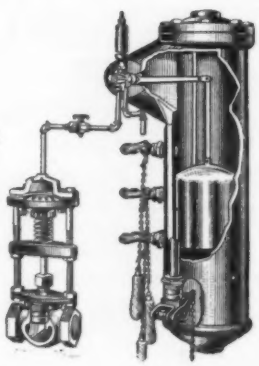

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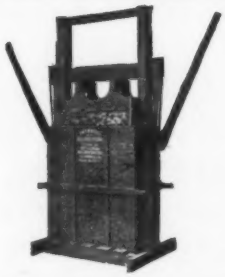

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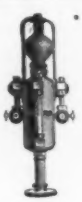

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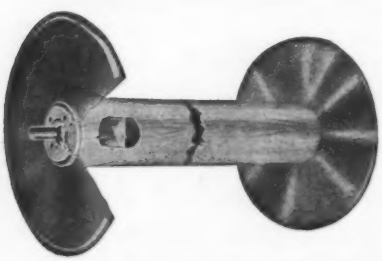

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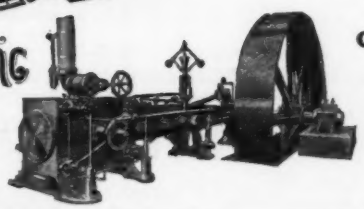

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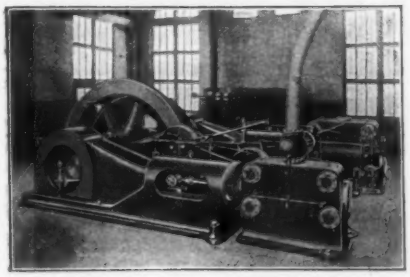

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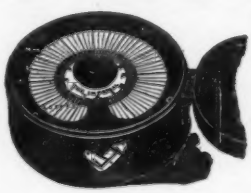

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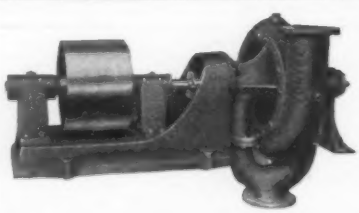

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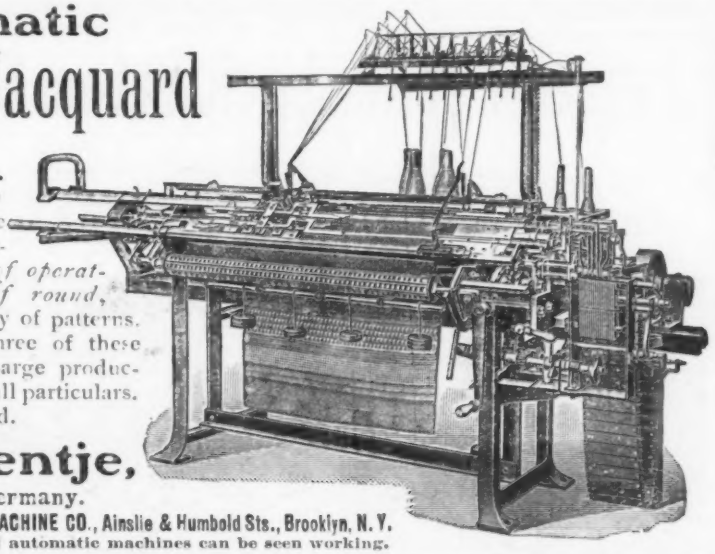

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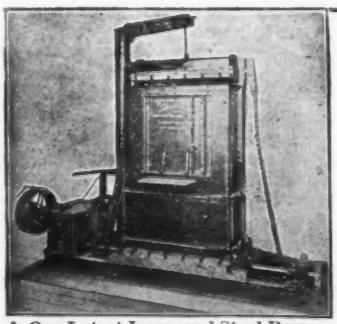

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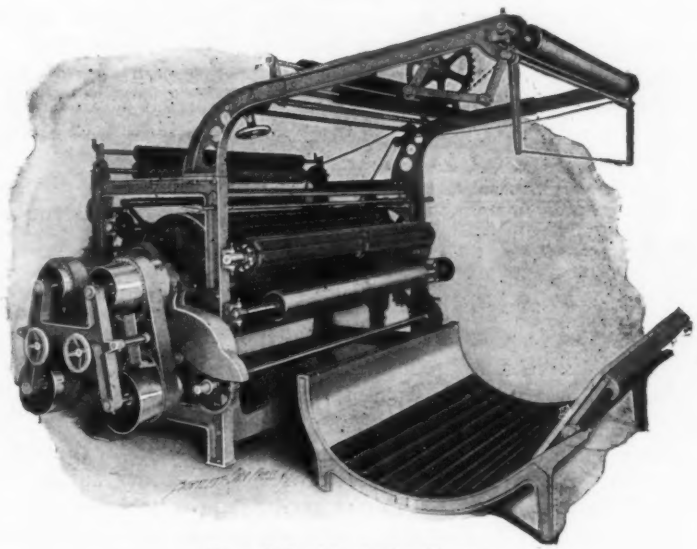

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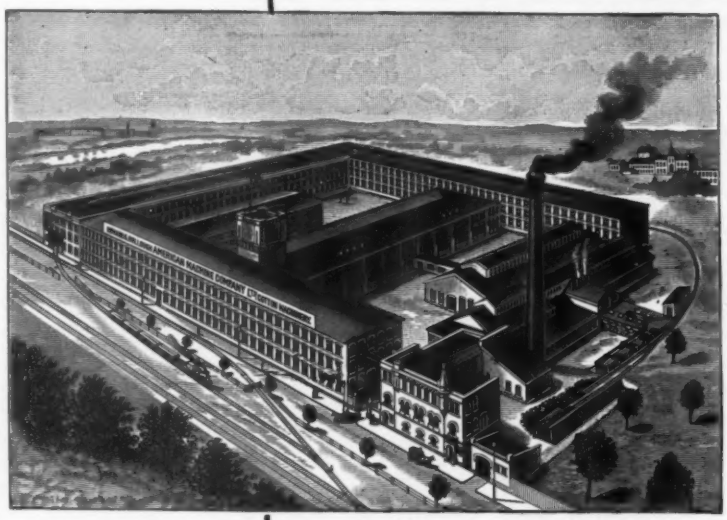

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TEXTILE WORLD RECORD

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The Textile World and Textile Record.

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Monthly Comment.

The Attempt to Standardize Cotton.

An account of the proceedings last month at Washington to standardize the grades of American cotton is given in this issue by our special Washington correspondent. How well the work has been done by the committee that met at the request of Secretary of Agriculture Wilson cannot be determined until the samples they selected are submitted to the test of practical trade experience. But irrespective of whether the actual classification is well done or not, there is little doubt but that the Department has bungled the work in its preliminary stages by enveloping it in secrecy, the common fault of government bureaus.

It was not only proper but necessary for the success of the undertaking to have the cooperation of the foreign cotton trade in establishing these standards, because two-thirds of the American cotton crop is consumed in foreign mills. It appears that the Department planned to secure the services of representatives of the foreign industry, but in pursuance of the policy of secrecy, made the attempt by writing to the president of the International Cotton Federation, asking him to recommend experts to attend the meeting at Washington. It was through the unexpected publication of this letter in England and in the Textile World Record of December, 1908, that the details of the plan for the cotton standards meeting first became generally known in this country. The International Federation apparently took the matter very seriously and its executive committee at a meeting held soon after in Switzerland announced that it had been decided to accept the Washington invitation. The committee, however, was completed and the meeting has been held without the presence of any representative of the mills that use two-thirds of our cotton crop. Now it is announced that representatives of the European industry are to be summoned to "give their assent and cooperation in order that the grades adopted by the Department may be as widely accepted as possible." This is a fine illustration of putting the cart before the horse, and of the way not to standardize cotton.

All Wool.

The meaning of the term, "all wool," as applied to a suit of clothes, recently came before the Supreme Court of New York State for adjudication. Some time ago I. Hamburger & Sons, of Baltimore, bought of Nathan L. Woolf, 830 Broadway, New York, a quantity of suits which Woolf sold as "all wool" at $6.50 per suit. When the first lot was delivered Hamburger & Sons refused to accept them on the ground that they were not made of strictly all wool cloth. Woolf continued to manufacture the suits to fill the order and brought suit against Hamburger & Sons to enforce the contract, the lower court giving a judgment to Woolf for the full amount, $1,546. The case was appealed and at the hearing before

the Appellate Division of the Supreme Court, Woolf, through his attorney, claimed that the goods were "all wool commercial senses of the term," but that they were not strictly all wool and Hamburger & Sons had no right to expect them to be.

"Do you mean to say that when I order an all-wool suit I mustn't expect to get an all-wool garment?" asked Judge Ingraham.

"Not for $6.50," was the reply of Mr. Woolf's attorney.

A new trial was ordered by the Court, this action indicating that "all wool" is not necessarily all wool, when a suit is sold for six dollars and fifty cents.

The Compulsory Working of Foreign Patents.

Two bills were introduced in the House at the last session of the 60th Congress having for their object retaliation against those nations which require the working of American inventions patented in the respective countries. While this object is not explicitly stated in the bills it follows necessarily from their provisions. The first bill, introduced by Congressman John H. Stephens, of Texas, contained this section:

That (a) whenever any letters patent is issued by the United States on any article, commodity, compound, device, mechanical appliance, or machine protected by patent, or (b) any copyright issued by the United States on any article, musical composition, musical instrument, or device for reproducing music or musical composition, or any picture, book, pamphlet, or any other work of literature or art protected by copyright, to any citizen of any foreign country, then such patentee or copyright grantee shall pay to the United States the same amount of fees and subject himself to the identical laws, restrictions, rules, and regulations as such foreign country imposes upon a citizen of the United States for patenting or manufacturing and selling the patented article therein; and the failure on the part of the foreign patentee to comply with this law shall operate as a forfeiture and cancellation of such letters patent or copyright in the manner hereinafter provided.

The other bill, introduced by Congressman F. D. Currier, of New Hampshire, who is chairman of the committee on patents contains this section:

Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law and other due proceedings had, obtain a patent therefor: Provided, however, That whenever a patent is issued to any citizen or subject of a foreign country it shall be subject with respect to its manufacture in this country to all the limitations, conditions, and restrictions that are imposed by the country of said citizen or subject upon the manufacture in that country of patents issued therein to citizens of the United States: Provided further, That this Act shall not affect any patent heretofore granted.

While these bills were not passed they are of interest as showing the substantial agreement of members of both political parties on the question of meeting the compulsory working provisions of foreign patent laws. Legislation on this subject has been delayed for the purpose of giving the State Department an opportunity to try to find a solution of the difficulty by diplomacy. The objection to the Stephens and Currier bills is that under them foreign patent laws are automatically made the law of the United States as far as the latter relate to the inventions from the respective countries. This introduces needless complications. A much better way is for the United States to enact its own law requiring the working of foreign patents, subject to reciprocal arrangements by treaty.

An Export Duty on Cotton.

Every little while somebody comes forward with the proposition that an export duty be levied on raw cotton with the object of making the cost so high in foreign countries that the world's cotton manufacturing industry will be transferred to the United States. Strange to say the proposal is at such times circulated by the press of the country with little if any protest and often with editorial or reportorial approval. We have become so accustomed to the scheme that at times we have not thought it worth while to pay any attention to it, but its last appearance is from such a quarter as to cause profound astonishment, and call for some comment. The latest advocate of an export duty on cotton is William M. Wood, president of the American Woolen Co., whose interview with a reporter of the

New Orleans Picayune is reported in that paper as follows:

Wm. M. Wood, president of the American Woolen Mills Co. of Boston, says that if the congress could be induced to establish an export duty on raw cotton the almost immediate result would be the practical control by American spinners of the cotton supply of the world. Mr. Wood says that of course such a thing has never been seriously considered, but that there is nevertheless, no doubt about its benefit to the United States. It would cause something of a lagging in cotton purchases for the first year or two until a sufficient number of mills could be erected, but foreigners would have to buy the cotton no matter what the price, and they would have to bear the burden of the export tax. A chain of cotton mills would then be established clear across the cotton belt, from North Carolina to Texas, and instead of being the producer but only a small factor in the manufacture of cotton the South would become as great an industrial as it is an agricultural country.

The idea is not original with Mr. Wood, despite his belief that it is. The framers of the Constitution of the United States foresaw the temptation for special interests to oppress other interests and the foreign purchaser by an export duty on American products, and accordingly inserted this provision in the organic law of the new nation, Article 1, Section 9:

No tax or duty shall be laid on articles exported from any State.

It would have been impossible to have obtained the approval of the thirteen original States to a Constitution that permitted a duty on exports. The injustice of an export duty on cotton makes self-evident the wisdom of the framers of that section of the Constitution. Fortunately an amendment nullifying that provision is impossible. A curious contrast with the plan to tax exports of cotton is found in this reference by Mr. Wood to the tariff on wool:

I think that the corporations of the country are generally composed of honest men. Of course, there are a few exceptions. But the majority are straightforward and truthful, and what they stated before the ways and means committee was based upon actual facts.

Those who were able to show that the success of their industries was dependent upon tariff protection are entitled to serious consideration. The wool growers of Montana, Wyoming and Washington and such regions have a hard enough time of it as it is. They deserve protection and they are honestly entitled to it.

We are unable to fathom the principle of economics in accordance with which one textile fiber is prevented from leaving the country while another is prevented from coming into it. Mr. Wood made this reference to the revision of the tariff:

"Wonderful progress has been made under tariff protection, and the country has grown enormously rich," said Mr. Wood. "The country was about beginning to derive the benefit of protection when tariff revision became imminent. Of course, I cannot foresee what congress will do, but it is to be hoped that wisdom will prevail, and that too much attention will not be paid to the howlings of free traders."

Whatever may be thought of Mr. Wood's plans for regulating the movement of cotton and wool, we must all agree that he is a thoroughgoing optimist in hoping that "wisdom will prevail" in Congress.

The Reform of the New York Cotton Exchange.

That the effort of the New York Cotton Exchange to reform itself has not been abandoned is shown by two propositions that have recently been made by the members of that institution for changing its methods of doing business. First came a plan endorsed by a special committee and the board of managers of the Exchange, recommending the establishment of a special contract for spinners, and to be distinct from the regular contract which is now under fire. The supposition underlying this plan is that spinners who want real cotton will use the "spinner's contract" and that in this way the objections to the present trading contract will be removed. A few weeks after this plan was broached a circular letter was issued by the influential party in the Exchange that has advocated connecting the New York Cotton Exchange with a system of licensed warehouses in the South. The advantages of the warehouse system and defects of the scheme to establish a separate contract for spinners are set forth very clearly, it being pointed out that such a contract would be a standing confession of the defects in the other contract continued by the Exchange. Following is a portion of this circular letter:

The fact that both the Special Committee and the Board of Managers have urged the adoption of the new contract would seem to indicate a general realization by our members of the necessity of offering to the spinner, as the logical, ultimate buyer of our contract, an article as attractive for his purposes, as we at present offer to the original seller, or maker, of our contract, in the latitude of

deliverable grades. The particular proposal now under consideration, while open to criticism as to its value for increasing business, nevertheless gives official recognition to the one principle on which, it would seem, any permanent improvement in our business will have to be based. By whatever means it may be ultimately accomplished, we shall, in order to bring about a healthy and general activity, have to attract the actual buyer, the consumer, to our market much more directly than is at present the case.

Generally speaking, the spinner does not, and never will, buy cotton other than in even running lots or of a restricted range of grades. It follows, therefore, that if we wish to invite the spinner as a buyer in contradistinction to the large planter or small merchant as the initial seller, we must inevitably arrange to trade in contracts of restricted grades. The proposal of a "Specific Contract," in addition to the general contract, does not fully meet the required conditions. The Specific Contract, if adopted, will, because of its being handicapped in comparison with the general contract, in all likelihood become a dead letter, while the general contract will continue to meet the requirements of the cotton trade as little as it does at the present time. In order, therefore, to make the principle underlying the proposed Specific Contract effective, it is necessary to establish two or more contracts, entirely separate and distinct from each other and each consisting of a limited number of contiguous grades of the present scale; as, for instance, a "Low Middling" contract, to consist of all grades, half grades (and quarter grades) between "Good Ordinary" and "Low Middling," inclusive, a "Middling" contract, to consist of those from "Strict Low Middling" to "Strict Middling," inclusive, and a "Good Middling" contract to consist of that grade and all those above it.

The majority of our members fully realize, however, that such a separation of the commercial grades into distinct units, to correspond, as nearly as possible, to actual spot cotton conditions, is not feasible under the present methods of delivering on futures. In view of the difficulty already experienced in placing cotton on contract in New York, even on the existing wide range of grades, it is obvious that a close restriction of the grades on each one of a number of contracts would make it well nigh impossible to attract any cotton at all to this city for certification. While the general principle of restricted contracts, therefore, seems to furnish the basis for the satisfactory adjustment of the problem which confronts us, it is impossible of accomplishment, so long as delivery of cotton on our contract is confined to within the limits of the City of New York.

This will not be so, however, if we extend our Certificate System to the South.

We could (by means of licensed warehouses in the South) do away with the present great difference between a contract for the delivery of spot cotton in the future and a "futures" contract, as that term has come to be regarded, and could make the latter represent, as only it should, a contract for the future delivery of spot cotton at spot cotton prices at a spot cotton point.

The Textile Machinery Exhibition at Boston.

The management of the Textile Machinery Exhibition, to be held at Boston under the auspices of the Textile Exhibitors' Association at the time of the spring meeting of the National Association of Cotton Manufacturers, April 26 to May 1, reports steady progress. At the time of writing about twenty-five well known concerns had closed contracts and as many more have signified their intention of exhibiting without deciding on the amount of space to be used, some of them having taken refusal.

In the initial stage of an exhibition of this kind everyone wants to know who else is going in, and waits to see. When most of the space has been contracted for there are usually applications to fill twice the space available, and the late comers growl because the choice spaces are gone. The management has made good progress in the short time they have been working and urges those who are giving the matter consideration to come to an early decision not only to get the advantage of better locations, but to have ample time to prepare an attractive exhibit.

There is no doubt that the exhibition will prove a most interesting adjunct to the spring meeting, attracting more than the usual attendance of cotton manufacturers and practical men and affording machine builders and others having new devices an opportunity which should not be neglected for showing them in practical operation to these men and many others in Boston and vicinity who will attend at a time when they are at leisure and are interested in investigating such matters.

Among those who have already contracted for space are the following: Cell Drier Machine Co., Textile Machinery Co., Wm. Sellers Co., Western Electric Co., American Warp Drawing Machine Co., S. F. Bowser, Oneida Steel Pulley Co., Allis-Chalmers Co., Universal Winding Co., Dodge Mfg. Co., Westinghouse Electric & Mfg. Co., C. J. Root Co., Cling-Surface Co., H. W. Butterworth & Sons Co., Holtzer-Cabot Electric Co.

Literature with full particulars may be had from Chester I. Campbell, Mgr., 5 Park Sq., Boston, Mass.

The Revision of the Textile Tariff.

Developments of the Month as Seen by the Editor of the Textile World Record.

SCHEDULE K.

Wool and wool products have crowded other textile interests from the stage and claimed the chief attention of the law makers at Washington since our last review was written. We closed last month with the meeting of carded woolen manufacturers at Boston on Jan. 23d, which adjourned with the understanding that the invitation of the National Association of Wool Manufacturers for a joint meeting of Committees should be accepted. A few days later the Ways and Means Committee announced that a special hearing would be granted to the wool manufacturers on Feb. 10th. The joint meeting of the committees representing the carded woolen manufacturers and the National Association of Wool Manufacturers was held in New York on Feb. 9th. No announcement of the result of their conference was made, but that it was a failure to reconcile their differences was evident the next day when representatives of each faction appeared before the Committee on Ways and Means to state their respective positions. There was but one way for an agreement to be reached at New York, and that was by a surrender of one side to the other. No compromise is possible between specific and ad valorem rates except that of levying the specific duties by classifications according to value, as in the case of carpet wools under the Dingley act, and the opinion is practically unanimous that that remedy with its dividing lines is worse than the disease.

THE CARDED WOOLEN MANUFACTURERS.

As a result of this failure of the worsted and carded woolen interests to reach an agreement the movement to form a carded woolen manufacturers' association has progressed, the latest step being a meeting of the carded woolen manufacturers of Maine at Augusta on March 3, which was attended by representatives of mills having 2,600 broad looms, 448 sets of cards and a capital of $10,000,000. The meeting was presided over by Hon. William T. Haines of Waterville and J. W. Manson of Pittsfield was temporary secretary. It was voted to form an association of the carded woolen manufacturers of Maine, to be called the Maine Woolen Manufacturers' Association. The following-named officers were chosen: President, Gordon Dobson, Pittsfield; vice president, Arthur Abbott, Dexter; secretary and treasurer, John Houston, Guilford; executive committee, the President, ex-officio, Herbert Gray, Old Town; William T. Haines, Waterville; George Walker, Warren; Ellis Jones, Newport; Daniel Hurd, North Berwick. After a general discussion, marked by great earnestness the following resolutions were adopted:

Resolved, That we, the Maine Woolen Manufacturers' Association, hereby declare our adherence to the principle of a tariff for the protection of American industries, and that such a tariff should be equitable and fair to all manufacturers.

Resolved, That on account of changed conditions the present tariff is working great injury to the carded woolen goods industry, and that we invite the cooperation of all carded woolen manufacturers in the United States in forming a national organization to further our common interests.

Resolved, That a copy of these resolutions be forwarded to every carded woolen manufacturer in the country, asking a reply.

A TARIFF COMMISSION.

A National Tariff Commission Convention was held at Indianapolis on February 16, 17 and 18, at which delegates from forty-two States were in attendance. A permanent organization was formed with the following officers:

President, J. W. Van Cleave, St. Louis, Mo.

Chairman Executive Committee, H. E. Miles, Racine, Wis.

Treasurer, John Kirby, Jr., Dayton, Ohio.

Following are the resolutions adopted:

We demand from Congress, for the equal benefit of all classes of the people, and in the name of all American industry, of farm, factory, labor and commerce, represented in the National Tariff

Commission Convention, held at Indianapolis, Ind., on February 16, 17 and 18, 1909, consisting of delegates from forty-two States and representing 223 Agricultural, Civic, Commercial and Industrial bodies, the immediate creation of a permanent Tariff Commission, for the following purposes and ends, through Congressional action, viz:

First: The collecting, and the intelligent, thorough and unprejudiced study of Tariff facts.

Second: The preservation and promotion of our domestic and the development and enlargement of our foreign trade.

Third: The accomplishment of this by reciprocal trade agreements, based on maximum and minimum schedules.

Fourth: The adjustment of the tariff schedules so that they shall affect all interests equitably.

Fifth: The fixing of the rates of duty to be paid on the imports from any foreign country, within the limits of the maximum and minimum rates established by Congress, under reciprocal trade agreements negotiated by or under the direction of the President, in order thereby to develop and protect our foreign trade by the means favored by President McKinley and authorized by Sections 3 and 4 of the Dingley Law.

We urge that, prior to the passing of a Bill creating such a Commission, Congress, during its special session about to be called, shall prepare and adopt, with the assistance of the best information presently available, a revised tariff, as completely and accurately adjusted to present conditions, and therefore as stable, as is possible at this time.

The Indianapolis Convention is an expression of the widespread sentiment in favor of improved methods of framing tariff laws. One may share that sentiment and yet withhold approval of the plan to create a Commission until the details of such plan are available for examination. And one who, sharing the sentiment in favor of an improvement in framing tariffs, is opposed to a tariff commission on principle may with equal consistency refrain from active opposition until the details of the plan are formulated. A general committee of one hundred and an executive committee of ten members were authorized at Indianapolis and are now being completed.

SPECIFIC DUTIES ON WOOL.

The first witness at the hearing before the Ways and Means Committee at Washington on Feb. 10th was Frederick Swindells, president of the Rock Mfg. Co., Rockville, Conn. He was opposed to specific duties on grease wool, and his remedy was to make the duty specific on the scoured weight:

Mr. Hill—Your proposition is there should be a specific duty on the clean wool ascertained by governmental tests at the customs house?

Mr. Swindells—Yes.

The weakness of this plan lies in the fact that it would levy the same duty per scoured pound on all grades of wool regardless of their quality or value. A pound of scoured fribs or dung locks would be subject to the same duty as a pound of fine long staple Australian wool. Even the Committee saw this at once and sought an explanation from Mr. Swindells, and succeeded only in eliciting the remarkable proposition that "a pound of wool is a pound of wool."

The Chairman—Leaving out the question of shrinkage, the value also depends upon the quality or fineness of the wool, does it not?

Mr. Swindells—Yes.

The Chairman—And the length of the fiber, perhaps?

Mr. Swindells—That depends wholly on what a man wants to use it for. Now you take the coarse wools, and it has no value at all to us—the mill work I represent.

The Chairman—Take the scoured wool of the first class; there is a difference in the range of prices. That is supposed to be pure wool, as near as you can get it?

Mr. Swindells—Yes.

The Chairman—There is a difference in the range of prices on that because of the quality of the wool, is there not, the scoured wool; or is there?

Mr. Swindells—I do not see where that applies at all to this tariff, because a man cannot bring these fine wools in unless he pays for the duty on the sand and grease there is in there; and you might bring some wools in here that will cost 50 cents a pound, and some that will cost a dollar. The value is regulated a good deal by its shrinkage.

Mr. Dalzell—What the chairman wants to get at is whether or not there is not something other than shrinkage that pertains to the value of the wool?

Mr. Swindells—A pound of wool is a pound of wool; and a pound of coarse wool is no good at all to me, but it might be more valuable to some men than the finer wool is. It depends entirely on what you want to use the wool for, but for fine wools—take scoured wools—the fine wools, in the market, are worth more than the coarse wools are; that is, to buy or sell.

Mr. Hill tried his hand with the following result:

Mr. Hill—On what basis would you think fairness to all classes of manufacturers would require the tariff to be made up on wool?

Mr. Swindells—Well, I believe that the duties collected on wool, each pound of wool that comes into the country for woolen or worsted, should be the same price per pound, cleaned. A pound of wool is a pound of wool, and it does not make any difference what grade it is.

Mr. Hill—In your judgment, is there any difficulty about fixing a tarift in that way?

Mr. Swindells—No, sir.

Mr. Hill—Would you have it specific or ad valorem?

Mr. Swindells—I should have it specific.

Mr. Hill—But on the clean wool?

Mr. Swindells—Well, the duty would have to be fixed on the greasy wool, because a man has got to have his wool before he can clean it. He has to take it out of bond before he can clean the wool, and the Government has to release the wool, and it would mix up things quite a bit unless he had the wool when he was ready to pay the duty on it. But there is an estimate that can be made on wool in the grease, when they can get to 1 or 2 per cent., and the duty placed on it at that time. All duties on wool are based largely on the values in London, and when a man is buying wool in London, he will estimate what that wool will shrink, and if a specific duty could be arranged he could then figure, and he could tell just the duty he would have to pay on it when it arrived in this country.

Finally Champ Clark became interested and asked a few pointed questions:

Mr. Clark—There is another thing he said, too; that there ought to be the same tariff on all wools.

The Chairman—Yes.

Mr. Swindells—That is clean wool.

Mr. Clark—But why should there be the same tariff on clean, fine wool as there is on the poor, clean wool?

Mr. Swindells—Because each of them is a pound of wool.

Mr. Clark—I know a pound of wool is a pound of wool in one sense, but they are not the same for the purposes of manufacture, are they? A pound of carpet wool is not worth as much as the wool you put in your product?

Mr. Swindells—I do not know anything about carpet wools, but about clothing wools.

Mr. Clark—Yes; but you said they were worth as much as the wools you use.

Mr. Swindells—I will take that back. I meant clothing wools. I had no idea you meant that.

EQUALIZING DUTIES.

Mr. Swindells missed a good opportunity and weakened his own case when Champ Clark asked about equalizing duties on wool and goods:

Mr. Clark—Suppose the tariff was cut down one-half, that would let in foreign wools if domestic wools were too high, would it not; it would let in certain parts of foreign wools?

Mr. Swindells—That is what we want. That is what I need.

Mr. Clark—I asked you that question in order to ask you another question. Suppose that this Congress should cut down the tariff on wools 50 per cent., how much could you stand, according to your own figuring? How much could you stand on the finished product? Could you stand 50 per cent.?

Mr. Swindells—We do not want to touch that. (Laughter.)

Mr. Clark—I know that.

Mr. Swindells—We do not want to touch that point.

Mr. Clark—I understand perfectly well that you want to keep all you have got and get more still.

Mr. Swindells—No, no; you do not understand me quite right about that. I do not want any general reduction in the wool schedule.

Mr. Clark—I did not ask you whether you wanted it or not.

Mr. Swindells—I did not say I want it. I said I wanted it on the kinds of wool I get. (Laughter.) But in the aggregate I do not want the wool schedule any lower. I simply told you about the irregularities of shrinkage—30 and 70 per cent. That makes a hardship on the man who uses the wool that shrinks 70 per cent.

Mr. Clark—I am not asking you what you want. I am asking you a plain question. This tariff on the kind of wool you use is prohibitive?

Mr. Swindells—That is right.

Mr. Clark—Part of the duty of this committee is to dig up about $150,000,000 more of revenue than we are getting now, and if they were to cut down the tariff on the kind of wool you use the foreign wools would come in and we would get more revenue. Now, if we conclude to cut down the tariff on wool 50 per cent., could you not stand a reduction of 50 per cent. on the finished product?

Mr. Swindells—If you reduce this down to my particular wool—

Mr. Clark—That is what I am talking about.

Mr. Swindells—We do not get it at all now; the duty is prohibitive. We do not make any goods.

Mr. Clark—You have not quit running your factory have you?

Mr. Swindells—No, no; but we do not make any of that kind of goods. We can not, because we cannot get the material.

Mr. Clark—Suppose you could get the material; suppose that we cut this tariff down one-half so that the material could come in and the Government should get some revenue, then I am asking you if you could not stand a cut of 50 per cent. also on your finished product?

Mr. Swindells—You want to leave the tariff just as it is; leave it on a basis of 22 cents cleaned on wool that pays 11 cents duty.

The Chairman—Are you through?

Mr. Clark—No; he never answered my question.

Mr. Swindells—I do not know that I can.

Mr. Clark—What do you say? Can you stand a 50 per cent. cut?

Mr. Swindells—No.

Mr. Clark—If we should cut the duty 50 per cent. on wool?

Mr. Swindells—No; that would be too much.

Mr. Clark—Could you stand a cut of 40 per cent?

Mr. Swindells—No.

Mr. Clark—Thirty-five per cent.?

Mr. Swindells—I never figured that to see how much we could stand.

Mr. Clark—You never figured the other side at all?

Mr. Swindells—No.

ADMITS THE INEQUALITIES.

The next witness was Charles H. Harding, of the Erben-Harding Co., Philadelphia, who spoke for the National Association of Wool Manufacturers and more particularly for the worsted interests. Mr. Harding made a good witness, showing plainly that he knew

his trade. He frankly admitted the inequalities of the present specific duty on grease wool:

The Chairman—It would be a very proper consideration for you in your business as to how an ad valorem duty on wool carried out to an ad valorem duty on woolens would affect your industry; and that would be a question for the committee to consider, and on which I would like to hear from you.

Mr. Harding—That only affects the compensatory duty on wool, and I am prepared to assert further that it is impossible to fix a compensatory duty on goods, even on an ad valorem duty on wool.

The Chairman—I realize that as one of the difficulties of fixing an ad valorem duty on wool. That is the reason I pointed that out. I want to hear from you on that subject.

Mr. Harding—Yes; I am not at cross-purposes with you at all. I say it is not one of the difficulties; I say it is an impossibility.

Mr. Underwood—State why. You assert it; now give us the reasons.

Mr. Harding—Because your ad valorem duty on wool is a variable basis for your compensatory duty, and it is impossible for us to fix a compensatory duty that will be accurate and specific on a variable basis.

Mr. Hill—Is there not the same variation in the specific duty with different shrinkages?

Mr. Harding—I will admit the inequalities of the present specific duty. I will freely admit them. The only thing I am talking about is the method of curing the inequalities; that is all.

That was the most important statement in Mr. Harding's testimony. It showed that the worsted interests know that the existing specific duty is unfair, that it oppresses the carded woolen manufacturer, who uses heavy shrinking wool, and favors the worsted spinner, who uses the light shrinking wool. That being admitted by the worsted spinners, a lot of time can be saved by accepting it as an established fact. The specific duty on grease wool is unfair.

THE DANGER OF UNDERVALUATION.

The inference from Mr. Harding's testimony, however, was that the evils of undervaluations under the ad valorem duty would be greater than the existing evils. He did not say this in set terms, but it was an unavoidable inference from the emphasis he placed on the danger of undervaluations and from the light touch with which he passed over the inequalities of the present specific duties on wool. This passage shows both the emphasis and the light touch:

Mr. Hill—The price is paid according to shrinkage of the grease wool, is it not?

Mr. Harding—Yes.

Mr. Hill—Why should not the duty be paid accordingly?

Mr. Harding—Because it is impossible.

Mr. Hill—Under the ad valorem?

Mr. Harding—To execute the collection of duties under the ad valorem system.

Mr. Hill—Is it any more impossible to do it under the ad valorem system than under the present custom, regardless of value and regardless of condition?

Mr. Harding—Yes; the present system works automatically. Whatever you bring in you pay 11 cents on the grease wool.

The Chairman—Let us see if it covers the market value.

Mr. Harding—Now you are raising another question.

The Chairman—Is there any difficulty in establishing the real market value of wool?

Mr. Harding—A very serious difficulty in establishing the real market value of wool at its point of origin when it is shipped to this country.

The Chairman—When it is shipped to this country?

Mr. Harding—Yes.

The Chairman—They have their sales in Australia as well as in London?

Mr. Harding—Yes.

The Chairman—And some people think that the wool market of the world is going to Australia instead of being in London. They have a great market there, have they not?

Mr. Harding—When I went into business London was selling 70 per cent. of the Australian clip. Last year the colonists sold 70 per cent. of their clip. This year London has taken more. What the outcome will be it is impossible to say, because there are questions of banking and other things involved in that which it would be idle for me to guess about; but I say, and I think I can prove, that it is absolutely impossible to fix the value of a shipment of foreign wool at its point of origin, even though it was sold at auction. If your duty, say, was 50 per cent.—I have no favorite duty, and I have never interfered with the making of the duty but once on wool, and the appraiser made a slip of a penny a pound, he would present the importer with a cent a pound on his importation, and if the importer was dishonest and resorted to tricks of any kind, I am prepared to affirm that he could get out of the goods 1 1/2, 2, 2 1/2 and sometimes 3 per cent. on his importation, from the failure of the effort to fix the value of the shipment of wool at the time and place when and where it was shipped, even though it was sold at auction.

The Chairman—Do you think in such a system the inequalities would be as great as they are under the present system?

Mr. Harding—With such a system as that, I believe that the importing business would pass out of the hands of honest importers and the manufacturers who import their own wool, and would go entirely into the hands of rascals, upon whom we would have to depend for our supply.

No one who saw and heard him could doubt Mr. Harding's honesty, and yet he left the impression that unconsciously he had confused the special interests of the worsted spinners, of which he is one, with the interests of the trade and community in general. This impression was deepened by his complete failure to make any reference whatever to a possible preventative of undervaluations under an ad valorem duty on wool. He admits the injustice of specific duties on wool, and we will agree as to the danger of undervaluations with ad valorem duties. Now assuming that an ad valorem duty honestly collected is fair to all interests, a proposition over which there will be little if any dispute, the natural course would be to seek a method by which the ad valorem duty can be honestly collected.

THE REMEDY FOR UNDERVALUATION.

Although Mr. Harding admits the inequalities of the present specific tariff, one will search his testimony in vain for any reference to the possibility of assuring the collection of an ad valorem duty. He lays chief stress on his fear, minimizes or ignores actual evils, and offers no suggestion for making the ad valorem remedy effective.

Now with the situation as it is admitted to be, the natural course is to make an ad valorem duty effective by making undervaluations too expensive to be risked. Nothing could be more brutally and automatically drastic than the present specific duty on grease wool, regardless of the amount of grease and dirt present or of the value of the clean wool. That fact should reconcile us to making the customs administrative law so drastic that no one could afford to run the risk of undervaulation of wool or any other article. At the hearing at which Mr. Harding was a witness this method was discussed by a group of spectators, and one of them stated that English statutes supplied a remedy for undervaluations, there having been enacted at one time a law providing that goods undervalued for the purpose of evading duties should be sold at public auction, one-tenth of the net proceeds of the sale paid to the importer, and nine-tenths pocketed by the government. This would certainly be effective. It seems harsh, but becomes mild when compared with the specific tariff on grease wool, which forces the importer to pay the duty on worthless grease and dirt, without the formality of condemnation and an auction sale.

WHO MAKES THE TARIFF?

At one point Chairman Payne asked some questions about the inequalities of the present tariff rates on wool, and in avoiding a direct reply Mr. Harding gave his idea of how the tariff on wool has been and will continue to be fixed:

The Chairman—Now we have arranged duties on wool of the first class, scoured wool, 33 cents a pound, and of the second class, 36 cents a pound. That is the duty on the scoured wool, supposed to be clean wool, and that was supposed to be the fair difference between wools of the first and second classes when the tariff bill was made. There never has been any actual test of that, because we never have imported any of these scoured wools to speak of.

Mr. Harding—That is right.

The Chairman—Going to show that the duty on scoured wool was higher in proportion than the duty on wool in the grease in one instance and on the washed wool in the other. Would that be a fair deduction?

Mr. Harding—Well, Mr. Chairman, in the first place the duty on wool has been fixed, as a rule, by the wool grower, and I suppose it will so continue; and I do not object. I would like to add that I do not object.

The Chairman—You are satisfied?

Mr. Harding—I do not object.

The Chairman—You do not agree, then, fully with the statement that the committee makes the duty? (Laughter.)

Mr. Harding—Oh, well, I will put it in another shape, that when you want to get your question answered as to the adequate protection to the wool grower, it is the wool grower who wants to answer your question. I am not a wool grower.

Champ Clark evidently thought there were two sides to this question of fixing tariff rates, for a little later he questioned Mr. Harding as follows:

Mr. Clark—You stated to the chairman that the wool growers fixed the schedule on wool. Is it not true that the woolen manufacturers fixed the schedule on woolen goods?

Mr. Harding—I will say this: That depends entirely upon what construction you put on the fact that you invite us to give testimony. If you give credence to our testimony as reliable, if you act on that testimony as being that of honest men given in their best judgment, and you guide yourselves by that in your conclusion on the facts, in that sense the manufacturers assist in fixing the duty.

Mr. Clark—Did you read the cross-examination

of Mr. William Whitman before this committee six or eight weeks ago?

Mr. Harding—Yes; and I thank you for referring to it.

Mr. Clark—Does not that whole performance demonstrate beyond any peradventure that the woolen manufacturers did fix this specific schedule on woolen goods?

Mr. Harding—I know from personal knowledge that, while Mr. Whitman may not have been able to answer certain questions at that time, the point you had in mind as to the duty upon tops was a thing about which he knew nothing whatever. I am prepared to prove that. In the first place, on the day when the Dingley tariff was first announced to the public in the newspapers I wrote to Mr. Dalzell, and at that time the duty on tops was a paragraph immediately preceding the paragraph containing the duty on yarns, and the bill so came out of the committee and the bill so stood in the House. I only tell you this to prove my case. I wrote to Mr. Dalzell saying to him that the duties on tops and noils were too high.

Mr. Dalzell—What was it?

Mr. Harding—On the 16th of March, 1907.

Mr. Dalzell—What was the duty?

Mr. Harding—The duty on tops I do not remember now; but we had recommended to Mr. Dingley, and he had adopted in the bill, a specific duty on tops which was lower than the duty on yarns.

Mr. Clark—Well, now—

Mr. Harding—Let me finish my story, now that I have got this far.

Mr. Clark—All right.

Mr. Harding—And I stated that the duty on tops, as an article that costs less to manufacture than yarns, ought to be less than the duty on yarns; and I have since forwarded a copy of that letter to Mr. Dalzell, which stated that the duty on noils ought not to be over 20 cents a pound, for the reason that the duty on washed wools was at that time three times the duty on grease wools, and the average value of fine noils, as compared with the value of scoured wool of the same kind, had been about 60 per cent. both here and abroad; and stating that fact to Mr. Dalzell, I said I thought it would be quite enough duty to put on noils to have them 60 per cent. of the duty on scoured wools—that is, 60 per cent. of 33, or 19.8. That was a lower duty than then stood in the paragraph. Mr. Dalzell did not tell me whether my opinion was worth much or little; he simply acknowledged the letter. That was all I could expect.

Further along in the process of the legislation the specific duty on yarns disappeared and was changed into an ad valortm form, as it is now. With its disappearance the paragraph on tops disappeared wholly, and I have since written saying I thought that was an accidental matter; but I knew nothing about it. I want to finish my history of this. On the 22d of December of this year a letter was read to me from an intimate friend of the late Judge Lawrence, in which he said that he and Judge Lawrence had appeared (after the bill had gone into the Senate) and had insisted upon the suppression of this paragraph on tops, and upon putting tops among the articles not specifically provided for, for the reason that Judge Lawrence had in his mind the fact that tops had been broken up and sent into this country mixed in with 5 or 10 per cent. of broken threads, and had been coming into the country even under the McKinley bill, paying 50 cents less duty than the tariff was expected to raise from them; so that the whole of the responsibility for that top busjness does not rest on Mr. Whitman, but upon Judge Lawrence and some friends of his who, with the idea of amply protecting the wool grower, had this put in the bill as respects tops, by-products, etc. It was said by him, "It is possible that tops may be called something else than they are called now, and they may be dutiable then as waste." That is simply the history of the argument.

Mr. Clark—How does it happen then, that Mr. Whitman, who came here as the exponent of the whole woolen industry, did not know what he had done himself.

Mr. Harding—He had not done it himself.

Mr. Clark—How does it happen that he did not know that he had not done it?

Mr. Harding—I do not know, sir. I did not know it myself until December.

Mr. Clark—You and I agree on one proposition.

Mr. Harding—I do not know.

Mr. Clark—That is, to fix up a scientific tariff; the tariff on yarns ought to be higher than on tops.

Mr. Harding—Yes.

Mr. Clark—You agree with that?

Mr. Harding—Yes.

Mr. Clark—And somebody, by a twist of the wrist, got the tops into this unclassified department?

Mr. Harding—Right, sir.

Mr. Clark—Where they have made tops pay a higher tariff than yarns?

Mr. Harding—That was Judge Lawrence and some of his friends.

Mr. Clark—And it ought to be changed?

Mr. Harding—Absolutely; it ought to be changed, and I hope you will change it and put in a new paragraph on tops, making it specific; a compensatory duty on tops plus a small number of cents for the extra expense of making tops in this country.

ABANDONED CARDED WOOLEN MANUFACTURING

One striking feature of Mr. Harding's testimony was the disclosure that his firm had abandoned the carded woolen branch of their business some years ago because it was unprofitable. The carded woolen manufacturers contend that their trade is unprofitable because of the tariff that favors the worsted spinner at their expense. If this contention is sound then Mr. Harding's own experience supplies one of its object lessons:

Mr. Hills—Mr. Harding, what is your business?

Mr. Harding—Our business?

Mr. Hill—Yes.

Mr. Harding—We are makers of worsted yarns—fine warp worsted yarns, sir.

Mr. Hill—You do not manufacture woolen cloth at all?

Mr. Harding—No, sir; not at all.

Mr. Hill—I understood you to say that you formerly were in the woolen business.

Mr. Harding—We were formerly manufacturers of woolen yarns.

Mr. Hill—When did you go out of the woolen-yarn business?

Mr. Harding—About seven or eight years ago.

Mr. Hill—Why did you go out of it?

Mr Harding—We had carried on the woolen yarn business, first as makers of Germantown yarns, hand-knitting yarns, until the importation and the home manufacture of the worsted yarns made on French machinery, which were supplanting the Germantown woolen yarns, made the business unprofitable. When it came to be absolutely unprofitable we dismantled our carding machinery and sold part of it; and we said to our selling agent: "If you think that there is anything more to be done in carrying on this woolen yarn business, you can get your yarn spun on commission, and we will treat your business as a separate business, and you can run the business as long as there is any profit in it; and when we get to a point where you cannot any longer make any money out of this woolen yarn business we will drop it." That is the history of it.

Mr. Hill—Then you went out of the woolen yarn business two years after the Dingley tariff bill was enacted?

Mr. Harding—The Dingley tariff bill had nothing at all to do with it.

Mr. Hill—What caused the woolen business to be unprofitable?

Mr. Harding—I do not know, sir. It was a small part of our business, and when it became unprofitable we abandoned it. I do not know the reasons.

Toward the close of Mr. Harding's examination the Committee got down to some hard facts:

Mr. Hill—Do you favor the present wool schedule without change?

Mr. Harding—If a change can be made that is of advantage to all the people concerned in the present wool schedule, I would be foolish to oppose it.

Mr. Hill—Do you think the present schedule is an advantage to all the people engaged in all branches of the woolen industry, worsted and woolens?

Mr. Harding—I think that the present schedule is more advantageous to all people engaged in the various branches of the industry than anything else that I have yet heard proposed.

Mr. Hill—I quote from the pamphlet recently issued by W. A. Graham Clark (the government expert on this matter) the following duties, on page 70: The duty on greasy Port Philip wool, 45.3 per cent. ad valorem; on noils, 61.9; on scoured wool, 67.9; on tops, 133.6; on waste, 187.5; on warp yarn, 2/44s, 97.8; weft yarn, 1/20s, 104.6; finished cloth, 101.3. Do you think those duties are equally advantageous to all branches of the industry?

Mr. Harding—Does not the question answer itself, sir, on the face of it?

Mr. Hill—I am not answering questions. I am simply asking you for information. In your judgment, as a manufacturer of worsted yarns, do you think that those duties bear equally upon and are equally beneficial to all branches of the woolen industry?

Mr. Harding—I say what I said before—that I have as yet heard nothing proposed that would bear more equitably on the different branches of the industry than the tariff that we have now. My mind is an open one to conviction.

Mr. Hill—I am not speaking now of the compensatory duty on cloth; I am speaking of the wool up to your product—up to the yarn maker. Do you think that the present duties bear equally advantageously on the manufacturers of woolen yarns and on the manufacturers of worsted yarns?

Mr. Harding—I do not as yet see that the manufacturer of worsted yarns who uses the same wool as the manufacturer of woolen yarns has an advantage over him.

Mr. Hill—Oh, of course not—of course not, if he uses the same wool. Do you use the same wool in making worsted yarns that you did in making woolen yarns?

Mr. Harding—We use the same wool in making worsted yarns that is sometimes used in making woolen yarn.

Mr. Hill—Sometimes you do; but do you as a rule? Is it not a combing wool that is used in making a worsted yarn, and a merino wool, practically, that you use in making woolen yarn?

Mr. Harding—We use merino wools in making worsted yarns; and my business is the making of worsted yarns entirely out of merino wools.

Mr. Hill—And you think that these duties, with a double duty on class 1 for washed wool and a single duty on class 2, is equally advantageous to both parties?

Mr. Harding—I will not say that.

Mr. Hill—I do not believe I care to ask any more questions.

And Mr. Harding's testimony ended with the following passage:

Mr. Clark—Mr. Harding, you answered Mr. Hill that this scheme of wool tariffs is equally advantageous to both. Do you think that that doubling up of the tariff on washed wool as compared with grease wool is a fair proposition?

Mr. Harding—I have not had anything to do with washed wools, sir, for thirty years; and I am not in a position to answer that question, for I do not know.

Mr. Clark—That is the end of it, then.

Mr. Harding—All right; I am satisfied.

The Chairman—That is all, Mr. Harding.

THE CARDED WOOLEN SIDE.

The case for the carded woolen manufacturers was presented by Edward Moir, president of the Crown Mills, Marcellus, N. Y., and chairman of the committee appointed at the Boston meeting on Jan. 23d. He began by reading a brief from which we take the following:

At a meeting of the woolen manufacturers held in Boston the 26th ultimo, those in attendance representing over 8,000 looms, it was unanimously voted that a committee present to your honorable body the position the woolen industry is in with respect to its raw material under Schedule K.

Mr. Moir submitted a number of samples of foreign wool recently brought from London, and gave these particulars regarding shrinkage and Dingley duties:

Table 2. Prices of wools at last London sale, on which the Dingley duty would run from 36 2/3 per cent. to 137 1/2 per cent.

	Dingley duty amounts to Per cent.
Sample 1450, Port Philip	36⅔
Sample 1250, Australian	44
Samples 3 and 4	66⅔
Sample 9, Cape	84
Another sample of Cape	113⅓
Sample 10, Montevideo	70⅔
Sample 1, Morocco	137½

We desire to call the attention of your committee to the fact that in addition to the great discrimination in favor of the worsted mills in raw material we have added to our burden the prohibitive rates of duty on noils, waste, shoddy and rags, all of which become the raw material of woolen mills, whose respective lines of manufacture require such. The gross injustice to the woolen mills and the consumer in all these features of Schedule K are so apparent we feel that these features need only be pointed out to your committee to have favorable consideration.

In Table No. 3 is shown the amount of wool of various grades and shrinkages, showing the duty paid, the compensatory duty on cloth per pound, and the gain and loss over the compensatory. In making worsted goods these are covered almost entirely by wools losing from 18 to 48 per cent. In order to be more than fair we have excluded the 18 per cent. shrinking wools and take those from 25 to 48 per cent., as no worsted mill brings in wool over 55 per cent., unless by mistake on the part of the buyer. Your committee will observe the gain is from 22 5/8 to 11 11/16 cents per pound on the compensatory, or an average of 18 cents per pound; whereas on the wools of heavy shrinkage the loss over the compensatory is on 70 per cent. shrinking wool 10 5/16 cents per pound to 20 5/8 cents on a cloth made from wool shrinking 75 per cent. From the above your committee will observe that by present methods of assessing the duty on wool some are favored in their raw material to the injury of those whose investment happens to be in a woolen business.

The woolen manufacturers ask only what is fair, and that is to be put on an equal basis with all others in woolen manufacturing. There is but one workable method, which is, assess the wool on its value. The same would apply to raw material in shape of by-products. If Congress will do this no one would have any right to complain, and we are entirely willing to leave the rate of duty in the hands of Congress and the wool growers.

Objection has been made by some manufacturers that it is not possible to arrange a compensatory duty on cloth if duty on wool is assessed on an ad valorem basis. This is an absurd statement, and could only be made by one not conversant with the subject or who has no desire to assist your committee to present a schedule that would be reasonable both to the manufacturer and the consumer.

With raw material on an ad valorem basis, it can certainly come much nearer being fair to all manufacturers than is the present schedule, which is as far out in its compensatory on cloth as it is in its ad valorem on wool. This committee is ready to do all in its power to further the work of your committee, and has no hesitation in saying that with wool and its by-products on an ad valorem basis a very much better schedule can be devised than the present Schedule K, one protective to some and prohibitive to others. This might be delegated to a committee of experts, who would furnish your committee with the necessary information for making such a schedule as would be fair to all concerned.

It ought to be apparent to your committee that a difference of 27 cents per pound in the compensatory duty on cloth in favor of one section of the textile industry puts that section in the position of fixing the price by comparison of one fabric with another entirely in the favor of the one favored by the weight duty on light shrinking wool.

It has been said that the wool grower would never consent to an ad valorem duty. As woolen manufacturers we desire to equalize the duty on wool as much in the interest of the wool grower as themselves by protecting them against the light-shrinking wools that are now being imported in considerable quantities.

It is conceded that 40 per cent. or over of foreign wool on a clean basis is imported in order to supply the demand of our manufacturers, but owing to the present method of assessing the duty on wool the woolen manufacturers are debarred from obtaining their proportion or whatever may be suited for purpose on an equitable basis.

GIVE AS WELL AS TAKE.

There was no hesitation on the part of Mr. Moir in accepting the logical conclusion of his demand for an equalization of the tariff on wool and wool goods.

The Chairman—Then you have more protection than you need on your woolens now?

Mr. Moir—Undoubtedly.

Mr. Clark—There is one square answer, anyhow.

Mr. Moir's evidence was greatly strengthened by the samples of foreign wool, noils and waste he showed with particulars as to prices, shrinkages and Dingley duties. Here is a typical example:

Mr. Moir (exhibiting sample to Mr. Boutell)—The stock in that sample cost probably 22 cents or 24 cents a pound in Great Britain. It is first made into yarn, and it is the waste yarn pulled-up.

Mr. Dalzell—What is that—waste?

Mr. Moir—Yes and the duty on that is 30 cents a pound, and the stock only costs 22. That is an-

other absurdity of the present schedule.

Mr. Hill—Is that garnetted waste?

Mr. Moir—That is garnetted waste.

THE CHAIRMAN WANTS JUST ONE SECRET.

Mr. Moir marred an otherwise excellent statement of his case by his reluctance to talking about the use of shoddy, cotton and other materials mixed with wool:

The Chairman—You said that with 50 per cent. duty on wool, 80 per cent. duty on cloth would protect.

Mr. Moir—Well, of course, in order to explain that, Mr. Chairman, I will have to give you a few secrets of the business, and I do not think you ought to crowd me quite so hard.

Mr. Gaines—That is what we want.

The Chairman—Let us have just one.

Mr. Moir—You understand that a piece of goods made to sell at 40 cents a pound with a profit is not usually made of virgin wool. When you can make up a piece of goods to sell at a small profit at 40 cents, it naturally would not be all wool.

Mr. Gaines—Would it be shoddy or cotton?

Mr. Moir—It could be a lot of those things. It could be shoddy or it could be some cotton.

The Chairman—You do not want to give up those secrets?

Mr. Moir—It cost me a lot to know them.

The Chairman—Then you are expecting us to "go it blind?"

Mr. Moir—Well, you know how it is, Mr. Chairman. A 40-cent piece of goods manufactured and sold with a profit would probably have anywhere from 10 to 15 or 20 per cent. of cotton in it; it might have 30 per cent. of shoddy; it might have 40 per cent. of shoddy; and it might have the balance of a reasonably defective wool.

RATHER SLOW ABOUT IT.

The ice having been broken at last, Mr. Moir got along finely when the question of protection concealed in the compensatory duty was brought up by Chairman Payne:

The Chairman—Is not this the situation—that you get the rate of duty of four times the 12 cents or the 11 cents, and you get an additional protection from what is supposed to be the compensatory duty on wool?

Mr. Moir—Oh, yes. The compensatory duty now is out of all reason. It is prohibitive.

The Chairman—It is out of all reason?

Mr. Moir—On many things.

The Chairman—Can you not give us some particulars about it?

Mr. Moir—Take the low-grade goods, for instance, made out of cotton and shoddy, with no virgin wool in them—they are getting the benefit of the compensatory duty.

The Chairman—You refer to the cotton-warp goods?

Mr. Moir—A lot of that stuff; yes.

The Chairman—Yes; they are getting a good deal of protection out of the wool compensation. What other class of goods do you refer to?

Mr. Moir—That would cover what we call cotton.

The Chairman—That is all you mean to cover? We have already statements showing that, and we have caught on to that fact. Once in a while we get at a fact here with regard to the woolen business; but we are rather slow about it.

WHAT MUST WE DO TO BE CLOTHED?

If wool substitutes were not used, wool clothing would be limited to the supply of new wool, which would make about 14 ounces of cloth annually for each person. How would the Committee on Ways and Means, the witnesses and the spectators at the tariff hearing have looked with that allotment? The fact is the use of wool substitutes is essential to the existence of a very large part of the population now living in temperate and cold climates. The popular prejudice against these materials is due to ignorance of that fact, but no woolen manufacturer should show any respect for that ignorant prejudice. This fact about shoddy and wool waste, that they are essential for clothing people properly, strengthens the case against the prohibitory duties that now exclude them from the country. This once known, and who will advocate a prohibitory tariff on these products?

The American wool growers are now supplying the people of this country annually with wool to make about 14 ounces of cloth for each man, woman and child. With this fact known will the wool growers dare to advocate in Congress or out of it, a tariff that would deprive the people of an adequate supply of warm and durable wool clothing while they (the wool growers) are unable to provide that supply themselves?

We are reliably informed that Senator Warren, of Wyoming, has his room in the Capitol already packed with samples of wool substitutes, waiting for the time to come when, the Payne bill having reached the Senate, he can bring them out to prove that their importation must be prohibited, because otherwise they would displace so much wool. The manufacturers of wool goods are not the ones most interested in this question. Let the truth be known, and then, if the growers of wool stubbornly insist on unreasonable and prohibitory rates on the raw material for the low priced clothing of the masses, let them settle the account with the American people.

Wool shoddy is one of the chief cornerstones of modern society, and the discoverer of that product was worthy of having a monument erected to his memory in the principal square of every city and town, with his birthday made a legal holiday. The manufacturer of shoddy goods is a public benefactor.

GROPING IN THE DARK.

To any one who has attended the hearings it has been evident that the members of the committee, with possibly one exception, had no practical knowledge of textile manufacturing and were groping in the dark for information. Their questions and manner showed this plainly. It is very easy for an experienced witness who is so disposed to take advantage of investigators of that kind, by involving the replies in a mass of irrelevant technical details that are all Greek to the questioners. If, however, the witness is frank and honestly desirous of answering the questions without reserve, he soon finds himself placed in a false position by making an attempt to answer questions that cannot be answered, or that neither he nor the examiner understands. The queries by the Committee constantly reminded one of the string of difficult or impossible questions that come from an observant child. One of the witnesses at a hearing in December, cornered by some query, came near making a bad break, by saying, "You remember the adage"—then suddenly realizing the brink he was on, exclaimed, "but of course that does not apply here." There were several exhibitions of this ignorance by the committee during Mr. Moir's examination.

THE REAL DINGLEY DUTY ON WOOL.

Mr. Longworth, of Ohio, at one point became interested in the rates on raw wool:

Mr. Longworth—The statistics show that the average price of all first-class wool in the grease imported last year (1908) was 24.7 cents a pound. Is that a fair average?

Mr. Moir—I think that would be a pretty fair average.

Mr. Longworth—And the ad valorem duty at 11 cents a pound was 44 per cent.; the specific duty of 11 cents a pound was equivalent to an ad valorem duty of 44 per cent.

Mr. Moir—Yes.

Mr. Longworth—Do you not think, then, that 11 cents a pound is a fair duty on raw wool of the first class?

Mr. Moir—I think that it is a good, stiff duty.

Mr. Longworth—But it is less than the very proposition (50 per cent. on wool) you are advocating.

Mr. Longworth thinks the duty on the wool actually imported represents the Dingley duty on wool, but he is mistaken. The Dingley duty on wool is the duty on all kinds of wool in foreign markets, including not only the light shrinking wool that American manufacturers import, but also that large supply of heavy shrinking wool which they cannot afford to import because of the high ad valorem equivalent of the Dingley specific duty. To determine the average ad valorem equivalent of the Dingley duty on wool, it is necessary, therefore, to apply the specific rate to the entire foreign wool supply. The wool sold at the London auctions represents fairly the foreign supply of class 1 wool and we have taken the trouble to apply the Dingley duty to the 60,000,000 pounds of wool sold there at the January, 1909, sale. This resulted in some interesting disclosures.

About the highest price obtained for grease wool at that sale was 1s 11 1/2d (47 cents) a pound for a lot from Victoria. The Dingley duty on this wool is 11 cents, or 23 per cent. of the London price. About the lowest price ruling for grease wool was 1d (2 cents) for a lot from Adelaide, on which the 11-cent duty is equivalent to 550 per cent.

A large quantity of scoured wool was sold on which the Dingley duty is 33 cents a pound. The highest price for scoured was around 2s 7 1/2d (63 cents), paid for a lot from Sydney. The 33-cent duty on this lot is 52 per cent. ad valorem. The lowest price for scoured was around 4d (8 cents), on which the 33-cent duty is equal to 412 per cent.

Of the washed wool sold at the January sales the highest price was 4s 1 1/2d (99 cents) a pound for a lot of very superior lamb's from Victoria, on which the Dingley duty of 22 cents is equal to 22 per cent. About the lowest price was 1 1/2d, paid for a lot of New Zealand, on which the Dingley duty is 733 per cent.

Here is a summary showing the extremes and averages of the ad valorem equivalents of the Dingley specific duty on the wool sold at the January London sales:

	High	Low.	Av.
	%	%	%
Grease	550	23	59
Scoured	412	52	125
Washed	733	22	129

These comparisons of extremes are instructive, showing how the wide ad valorem variation of a specific duty on wool results in a low duty on some lots and a high prohibitory duty on others. But it is the average ad valorem duty that Mr. Longworth had in mind, and to determine this we must take the average price as a basis. Our examination of the January sales at London shows that the average price obtained for grease wool was 9.3d (18.6 cents) on which the Dingley duty is 59 per cent. Washed wool (washed on the sheep's back) brought on an average 8 1/2d (17 cents) on which the Dingley duty is 129 per cent. Scoured wool at the January sales sold at an average price of 13.2d (26.4 cents) on which the Dingley duty is 125 per cent.

We submit these figures as a fair indication and not as a conclusive statement regarding the average Dingley duty on wool, because lack of time prevents our extending the inquiry to the Australian sales and South American markets. What we have shown, however, carries its own suggestion to the members of Congress that will meet this month with a mandate to revise the tariff. It is that they not only avoid Mr. Longworth's error, but that they make an immediate and thorough investigation, which would require but a week or two, to determine exactly what the real ad valorem equivalent of the Dingley duty on wool is, and then consider whether this equivalent imposed as an ad valorem tariff on wool and made certain by an effective customs administrative law, would not be fair to all interests, worsted, carded woolen, and those of the consumer, and at the same time afford better protection to wool growing in this country than the industry has now.

After Mr. Moir had made it plain that his grievance was the imposition of an 11-cent duty on wool regardless of the amount of grease and dirt it contained, Mr. Longworth and Mr. Boutell broke in with the following line of questions which showed plainly that they had but a very dim idea of the subject:

Mr. Moir—The point is that there are a great many wools which I would like to use on a basis of 11 cents a pound which will cost me over 100 per cent.

Mr. Longworth—Oh, you want to get in inferior grades of wool?

Mr. Moir—What do you say?

Mr. Longworth—Inferior, cheaper grades of wool?

Mr. Moir—Not cheaper—not necessarily cheaper.

Mr. Longworth—But you have just stated that you considered 25 cents a pound a fair price.

Mr. Moir—For certain wools.

Mr. Longworth—There were 90,000,000 pounds of wool imported.

Mr. Moir—Yes.

Mr. Longworth—At an average price of 25 cents. Is that a fair price for wool that goes to make clothing?

Mr. Moir—It might be a fair price this year, and next year it might be 25 per cent. higher.

Mr. Longworth—Thank you very much for your illuminating statement.

Mr. Moir—If you will allow me to continue this further, with all due respect, it is quite apparent that there is more information really wanted. For instance, here are Cape wools that will lose 75 per cent. in washing. I am using wools today that are grown in Wyoming that lose 73 per cent. in washing. I am using wools, again, that lose 63 per cent. in washing and that go into the same piece of goods. My contention is, and the contention that I have with the worsted men is, that there is an unfair and an outrageous discrimination on the raw material. I do not care what the grower wants: put it ad valorem, and I am satisfied.

Mr. Boutell—What kind of material do you make the most of?

Mr. Moir—We make men's-wear goods.

Mr. Boutell—You make the cloth?

Mr. Moir—We make the cloth for men's wear.

Mr. Boutell—That is the bulk of your output?

Mr. Moir—That is practically all of our output. Occasionally some of it may be used for making cloakings.

Mr. Boutell—What price or quality of woolens for men's wear constitutes the bulk of that output?

Mr. Moir—We run goods from summer weights from about 90 cents up to $1.75; $1.62 1/2 is about the top.

Mr. Boutell—Take goods that you sell for a dollar a yard; you make a good many of those, do you?

Mr. Moir—Yes; some of those.

Mr. Boutell—The same kind of wool goes into the goods that you sell for a dollar a yard?

Mr. Moir—What?

Mr. Boutell—All the goods that you sell for men's wear at a dollar a yard are made up of

about the same quality of wool?

Mr. Moir—It varies quite a bit; because, to explain, we make a piece of goods that weighs 10 ounces for a dollar, and we make another piece of goods that weighs 14 ounces for a dollar, and necessarily they are made out of different qualities of wool.

Mr. Boutell—If you can tell, of course, if you cannot tell us, just say so, if you can tell, will you tell the quality of cloth which constitutes, on the average, year by year, the bulk of your output?

Mr. Moir—We call it a medium.

Mr. Boutell—What would that sell for?

Mr. Moir—That would be made out of what we call a medium wool.

Mr. Boutell—I will take another start: What kind of wool goes into the bulk of the goods that you make?

Mr. Moir—We use half-blood and three-eighths. It is grown in New York, Virginia, Kentucky, and pretty much all over the United States; wherever we can buy it the cheapest.

Mr. Boutell—I wanted to get, Mr. Moir, an actual illustration of the kind of wool that is in a certain kind of cloth, and I thought I was asking some very simple questions. Either I am unable to make you understand, however, or you are unable or unwilling to answer my questions.

Mr. Moir—I am not unwilling.

Mr. Boutell—I thought it would be a simple thing to ask the kind of cloth that you make the most of. If you do not want to tell that or you cannot tell it, say so. Then I took a dollar a yard as a standard, and still I could not get any intelligent answer out of that. I want you to take some one kind of cloth that you make and describe it so that we can identify it, and then I want you to tell the committee the kind of wool that you put into that kind of cloth and identify it. Is not that a simple proposition?

Mr. Moir—Apparently.

Mr. Boutell—Why is it not actually?

Mr. Moir—For the reason that I do not suppose that we make a line of goods in my mill today that we make entirely of one kind of wool.

Mr. Boutell—I see. Now, suppose you do take an actual illustration. If you made, for example, the woolen cloth in the suit you have on, or can describe a piece of woolen in any other way—

Mr. Moir—Now this is something that may interest you. I had this suit made up purposely.

Mr. Boutell—You made that cloth in your mill, did you?

Mr. Moir—Yes.

Mr. Boutell—That is a good, actual exhibit.

Mr. Moir—Yes; a good exhibit.

Mr. Boutell—What did the wool cost you in that cloth?

Mr. Moir—It varied from 35 cents up to 64 cents a pound.

Mr. Boutell—In other words, then, you made that out of a mixture of wool?

Mr. Moir—Yes; about four different kinds.

Mr. Boutell—Four different kinds of wool were used in making that cloth.

Mr. Moir—Yes; maybe five.

Mr. Boutell—Do you make any kind of cloth out of one kind of wool?

Mr. Moir—Sometimes.

Mr. Boutell—How often?

Mr. Moir—Not very often.

Mr. Boutell—You could not say that you had recently made a piece of cloth out of one kind of wool?

Mr. Moir—I do not believe I could. I will explain that by saying this: We buy in lots of wool from 5,000 pounds up to 100,000 pounds. We buy them in all markets, and they have got to be brought together and put up in a pile and blended up. It is not so difficult when you know about it.

Mr. Boutell—You say you think there may be five kinds of wool in that cloth?

Mr. Moir—Yes.

Mr. Boutell—Could you give me the prices of the five kinds? You said from 35 to 64 cents. That accounts for two. Give me the prices of the other three.

Mr. Moir—Oh, well, I could not give you the exact prices unless I was home. Then I could give them to you.

Mr. Boutell—In other words, then, we cannot get from you an actual illustration of what you paid for the raw wool that went into any particular kind of cloth that you can identify, so that we can ask the simple question what ad valorem duty you think would be fair on that cloth so identified, provided we put a 50 per cent. duty on that wool so identified. You are unwilling to give an actual figure that would illustrate that simple problem.

Mr. Moir—In operating a woolen plant, you do not do it that way. This is a fabric made to sell at a certain price. I could give you about what percentage of value of the raw material there is in a dollar's worth. I could, if I were at home, give you a dissection of the whole business.

LACK OF PREPARATION.

On one hand Mr. Longworth ignores the main point at issue; and on the other hand Mr. Boutell asks a question that could be answered only after a lengthy and complex textile calculation at the mill where the cloth was made. Now anyone that looks Mr. Longworth or Mr. Boutell in the face knows that he is looking at an honest man. They want to get at the facts, but the trouble is they don't know. They are handicapped by a lack of familiarity with the details of the manufacturing industries they are investigating.

They should not be blamed for that ignorance in the first place, but they certainly are at fault in not becoming posted in advance of this tariff investigation. Textile manufacturing may be somewhat complicated, but there is no mystery about it, and the members of the Ways and Means Committee have known for a year or more that they would be called upon to investigate that industry in connection with tariff revision. Under those conditions the fault has

been that they did not make a hard study of the textile industry so as to be equipped at the proper time to sift the truth from willing and unwilling witnesses. Not one of the nineteen members has done this; not even one of the members of the Democratic party, whose chief hope of political resurrection lies in its gaining popular confidence by doing something useful for the country. It was the duty of the members of this Committee either to prepare themselves for this work or step aside and make room for representatives who would. What has been sorely needed and wholly lacking at these hearings is the careful preparation the keen yet courteous questions, the inflexible determination by which the truth could be laid bare.

THE CARPET INDUSTRY.

After Mr. Moir came George McNeir, of New York, who stated he represented the one hundred and forty carpet manufacturers in this country, and was connected with a carpet mill at Amsterdam, N. Y. He spoke with what seemed to be unnecessary fervor, despite the importance of the question under consideration. At the outset he dramatically announced that the carpet interests, after more than forty years of presumably harmonious affiliation, have broken away from the National Association of Wool Manufacturers:

This is the first time in tariff-making since 1867, when the carpet interests have broken away from the National Association of Wool Manufacturers and have elected to stand on their own feet, sink or swim, increased duties or lower duties. We want nothing more to do with the National Association of Wool Manufacturers in arranging the duties on third-class wools. We have had our experience on that.

And at the close he repeated that the divorce was final:

Mr. Clark—You say you have cut loose from this other crowd?

Mr. McNeir—Yes, sir; once for all. We think the carpet industry is big enough now to stand by itself. Any industry that has seventy-five millions invested in it, and is doing seventy-five millions of business a year is able to stand by itself.

CARPET WOOL FOR CLOTHING.

Mr. McNeir's chief grievance was over the statement which had become current that so-called carpet wools are used in the manufacture of other goods than carpets. Here is his first announcement on this point:

The statement has been made that these carpet wools, so called, are used in the manufacture of other lines of goods; and from the duties that have been placed upon these wools, both in the McKinley bill and in the Dingley bill, certainly the Committee on Ways and Means must have been influenced to some extent by that statement. It has been made and reiterated by men of prominence in the business.

He repeatedly referred to the claim that carpet wools were used in other branches of the wool manufacturing industry:

These goods (wools) are not fit, to begin with, for the manufacture of anything but carpets; and there is not a worsted spinner in the United States that will stand up here and admit that he uses carpet wools to make his worsteds out of. They do not want to be known as spinners of carpet wools. Every dollar's worth of wool that we have been able to trace, and we think we have traced it all, goes into carpet manufacture, and nowhere else.

Mr. Clark—And you do not think that anybody can rig up a scheme by which they can make clothing out of this carpet wool?

Mr. McNeir—They never have, Mr. Clark, and I do not think they will, for the reason that the wool is not suitable for clothing purposes.

Mr. Clark—What do the American woolgrowers generally care about carpet wools, then?

Mr. McNeir—I do not understand that proposition either: except that an honorable Senator, who represents one of the Rocky Mountain States, said to me the other day: "Mr. McNeir, I do not know what the fact is, but somebody went through our country at one time and told the people that third-class wools were displacing their wools, and they have believed it ever since."

The Chairman—Mr. McNeir, I suppose the reason that this duty was placed on carpet wools was on the statement of such people as Mr. Justice and some others that a portion of the wools were used for worsted or woolen purposes?

Mr. McNeir—Yes, sir.

The Chairman—That was the statement that induced the duty on carpet wools, both in the McKinley law and in the Dingley law?

Mr. McNeir—Yes, sir; that was the statement. But in the face of the evidence which we produced at that time, these two gentlemen never attempted to support their statement by any figures or facts, and they were never called upon to do so.

The Chairman—As I recollect it, it was all statement on both sides.

Mr. McNeir, as the representative of the carpet interests, had evidently taken deep umbrage at the statements of Theodore Justice, of Philadelphia, regarding the use of the so-called carpet wools for other goods than carpets:

When this question came up, and the statement was made by Theodore Justice ten years ago that a large quantity of carpet wools were used in the manufacture of other goods than carpets, the carpet trade went to work and secured affidavits, not unsupported statements, not the general statement of Mr. Theodore Justice or anybody else, but they produced sworn affidavits of men engaged in the importation of third-class wools, men whose character for honesty and integrity were fully equal to that of Theodore Justice or anybody else in the business and these figures proved that not 1 1/2 per cent. of the 96,000,000 pounds of carpet wools brought into the United States had ever been used in any other line of business. And some of these

A 413, ENGLISH SUPER WILTON CARPET.

affidavits further showed that where they had sold a bale or two of these carpet wools to spinners or woolen manufacturers as sample bales, they had returned to them at any price they chose to pay for them because they could not be used in the spinning business.

I call your attention to the fact that Mr. Theodore Justice does not produce any new arguments to you, but he prints in this record a statement which he made to you ten years ago, as if the conditions in the wool business, the manufacturing business, and everything else, had not changed in this country in the last ten years. He has presented to you tables, diagrams, charts, statistics of every kind and nature. He has told you almost the number of times that the sheep bleat out on the plains of Australia and South America; and bear in mind that he is a domestic wool broker, and if these carpet wools go into any other manufactures they must displace some part of his business. This is the one subject on earth that Theodore Justice ought to know something about. It is the one subject on earth that he ought to be able to prove to this committee. And yet not a single figure has he ever produced before you in the twenty years that he has been agitating this subject, but he contents himself with showing you a $12 suit of clothes (and he does not even claim that that was made out of carpet wools) and with publishing broadcast to the American wool growers in order to get them more dissatisfied with third-class wools than they have ever been before, the statement that an automobile coat has been made out of carpet wools, as if one swallow would make a spring, or one automobile coat would establish a great industry.

Mr. Clark—If this man Justice is a producer of American wool, what is his business with carpet wools?

Mr. McNeir—I cannot imagine, sir—I cannot imagine. He has no more to do with it than the King of Siam, unless it displaces some of the American wool.

Mr. McNeir promised to file a statement showing where the so-called carpet wools are used:

We are preparing, and whether he (Mr. Justice) produces his evidence or not we propose to give you in a few days, the statistics of the consumption of carpet wools in this country. We are going to give them to you from the men that use them; and if you can see where there are any carpet wools left to go into any other line of business when we

A 414, ENGLISH BEST BRUSSELS CARPET.

present you those figures, then, as I said before, if they interfere with any American industry, we are perfectly willing to have you put any duty you like on these goods.

It is a big job for any one to trace the imports of carpet wool to the point of con-

sumption. Because of the stocks in importers' hands and in transit between the custom houses and the mills, the large number of different lots and constant changes in the trade we would be disposed to conclude that Mr. McNeir had attempted the impossible were it not for the confident manner in which he told the Committee what he was going to do:

I should like to repeat once more that if the committee is influenced in the slightest degree by these general statements and rumors (for that is all they amount to up to date) that carpet wools enter into the manufacture of anything but carpets in this country, I trust they will wait until we can, within a week, furnish them with the statistics of the actual consumption of these wools.

Mr. McNeir also objected to the classification of wool under the Dingley bill by which Bagdad, China lamb's, Adrianpole and similar wools had been placed in class 1 and made subject to a duty of 11 cents a pound:

When the Dingley bill was enacted and certain carpet wools were taken out of the third class and put in the first class, what was the result? Did it benefit the first and second class people? Not at all. But it resulted in those particular wools being

A 415, ENGLISH STOUT BRUSSELS CARPET.

kept out of the United States; and Bagdads and Adrianoples and China lamb's and Egyptians are being sold today at less money in London than they were when they came in under the third class and were open to the carpet manufacturers. Not a dollar's worth of these wools, figuratively speaking (somebody might have brought in a few bales for samples, but figuratively speaking, not a dollar of these wools), has come into the country since they were put in the third class.

Mr. McNeir's statement at this point is confused. These wools were transferred to class one to benefit the American wool growers, who claim that this class of wool was being imported at a third class duty and used in place of first and second-class wools. And we are free to say that the claim was

A 416, ENGLISH TAPESTRY BRUSSELS CARPET.

well founded. We have used too much of this wool in making men's-wear cheviots to accept the statement that it has been used exclusively for carpets. Bagdad and similar wools are well adapted for many grades of wool goods, and thus come in direct competition with American wool. If they are placed within reach of American mills a large quantity will go into the manufacture of fabrics to be worn on people's backs instead of being trod under foot.

A DECLARATION OF INDEPENDENCE.

Here is a typical passage in which Mr. McNeir reiterated the carpet men's declaration of complete independence:

We do not want anything before this committee that is not fair. But we do not want our industry mixed up any longer with wools of the first class, or wools of the second class, or any other line of woolen manufacturing in this country. We have no secrets to keep away from this committee.

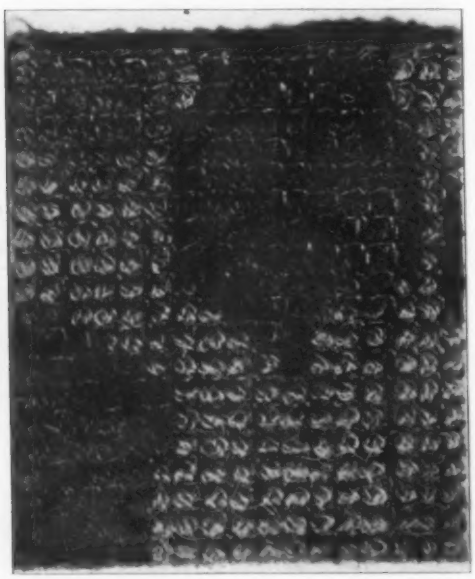
And again:

Mr. Gaines—Has there been recently a meeting of the carpet people looking toward organization?

Mr. McNeir—There has been, yes, sir; and a committee was appointed. There are 140 carpet manufacturers in the United States, and this committee of ten that was appointed represents 140 concerns.

Mr. Gaines—A committee was appointed to do what?

Mr. McNeir—To lay before this committee the statistics of the consumption of carpet wools, to counteract this general statement that has been made that they go into other manufactures, and to lay before the committee a statement of what the carpet manufacturers believe should be the duty on third-class wools.



A 417, ENGLISH TAPESTRY BRUSSELS CARPET.

The carpet men, as represented by Mr. McNeir, convey the impression that they have not yet become accustomed to their new found liberty after forty-two years of brotherhood with the wool manufacturers in an association of which they (the carpet men) were the chief founders. They will soon find, if indeed they have not found already, that, no matter how they may segregate in associations, they, in common with all of us, must conform to natural laws, which make a complete separation of the carpet industry from other branches of textile manufacturing forever impossible.

Here are some of Mr. McNeir's statements regarding tariff rates on carpets:

Mr. Clark—Another thing: Suppose we should adopt this proposition of yours, and put a 25 per cent. ad valorem duty on it—how much cheaper would carpets be?

Mr. McNeir—Just so much, sir, as would be measured by the reduction in the duty; for we are putting every dollar of the duty on the carpets today.

Mr. Clark—You think carpets would go down?

Mr. McNeir—I am sure of it, sir.

Mr. Clark. I am for your proposition, then. (Laughter.)

Mr. Clark—What ad valorem rate would you suggest?

Mr. McNeir—Twenty-five per cent., sir. If this duty (on carpet wools) is reduced the consumer will get the benefit of every dollar of it. Carpet prices will go down in proportion to the amount that you reduce the duty on carpet wools. If you say, "How about your compensatory duties?" we say, "Reduce them in the same proportion that you reduce the duty on the raw material." We are entirely willing to take our chances on that. If you say that there is some difficulty about arranging the compensatory duties on an ad valorem duty on wool, our answer is that there was no difficulty found in doing it under the McKinley bill, where we had ad valorem duties with a dividing line.

COMPENSATORY DUTIES ON CARPETS.

Compensatory duties on carpets are calculated by a different method from that adopted for wool goods. Instead of the 4 to 1 ratio between wool and cloth, the compensatory on carpets is fixed at a lump sum per square yard, thus, 60 cents per square yard on Axminster and Wilton carpets, 44 cents on Brussels, 40 cents on velvet carpets, 28 cents on tapestry Brussels, 22 cents on ingrains, and 90 cents per square yard (10 cents per square foot) on rugs. These rates are supposed to compensate the carpet manufacturer for the increase caused by the tariff in the price of the wool from which the carpets were made. An additional duty of 40 per cent. ad valorem is added in each case to protect the carpet manufacturer against the lower cost of manufacturing carpets in foreign countries. We have recently obtained and analyzed several samples of English carpets, calculating the compensatory and protective rates, both legal and actual, with the following result. The first three, A413, A414 and A415 are English carpeting with prices for export to Canada. The other two, A416 and A417 are English car-

peting with prices in the home (British) market:

A413. English super Wilton. 44.6 ozs. per yd., 27 in. 10,000 yds. at $1.40, $14,000. 7,500 sq. yds., 27,875 lbs. carpet. This requires 28,748 lbs. grease wool, 9,062 lbs. raw flax and 9,922 lbs. cotton yarn

Dingley duty:			%
7,500 sq. yds., 60c.		$4,500.00	32.1
40 per cent. of $14,000		5,600.00	40
Total duty		$10,100.00	72.1
Compensatory required:			
28,748 lbs. wool, 7c.	$2,012.36		
9,062 lbs. flax, 1c.	90.62		
		$2,102.98	15
Actual protection		$7,997.02	57.1

A414. English best Brussels. 29.4 ozs. per yd., 27 in. 10,000 yds. at 90c., $9,000. 7,500 sq. yds., 18,375 lbs. This requires 21,542 lbs. grease wool, 6,876 lbs. raw flax, 3.828 lbs. cotton yarn and 1,211 lbs. jute yarn.

Dingley duty:			%
7,500 sq. yds., 44c.		$3,300.00	36.7
40 per cent. of $9,000		3,600.00	40
Total duty		$6,900.00	76.7
Compensatory required:			
21,542 lbs. wool, 7c.	$1,507.94		
6,876 lbs. flax, 1c.	68.76		
		$1,576.70	17.5
Actual protection		$5,323.30	59.2

A415. English Stout. 22.7 ozs. per yd., 27 in. 10,000 yds. at 60c., $6,000. 7,500 sq. yds., 14,188 lbs. This requires 10,543 lbs. grease wool, 5,156 lbs. raw flax, 2,461 lbs. cotton yarn and 4,532 lbs. jute yarn.

Dingley duty:			%
7,500 sq. yds., 44c.		$3,300.00	55
40 per cent. of $6,000		2,400	40
Total duty		$5,700.00	95
Compensatory required:			
10,543 lbs. wool, 7c.	$738.01		
5,156 lbs. flax, 1c.	51.56		
		$789.57	13.1
Actual protection		$4,910.43	81.9

A416. English Tapestry Brussels. 22.8 ozs. per yd., 27 in. wide. 10,000 yds. at 50c., $5,000. 7,500 sq. yds., 14,250 lbs. carpet. This requires 5,866 lbs. grease wool, 4,872 lbs. raw flax, 6,669 lbs. jute yarn and 2,123 lbs. cotton yarn.

Dingley duty:			%
7,500 sq. yds., 28c.		$2,100.00	42
40 per cent. of $5,000		2,000 00	40
Total duty		$4,100.00	82
Compensatory required:			
5,866 lbs. wool, 7c.	$410.62		
4,872 lbs. flax, 1c.	48.72		
		$459.34	9.2
Actual protection		$3,640.66	72.8

A417. English Tapestry Brussels. 22.4 ozs. per yd., 27 in. 10,000 yds. at 30c., $3,000. 7,500 sq. yds., 14,000 lbs. carpet. This requires 3,126 lbs. grease wool and 12,390 lbs. jute yarn.

Dingley duty:			%
7,500 sq. yds., 28c.		$2,100.00	70
40 per cent. of $3,000		1,200.00	40
Total duty		$3,300.00	110
Compensatory required:			
3,126 lbs. wool, 7c.		$218.82	7.3
Actual protection		$3,081.18	102.7

A DANGER TO PROTECTION.

Now if a duty of 40 per cent. is not enough adequately to protect the American carpet manufacturer against foreign competition, make it 50 per cent. or whatever is adequate. But for the sake of the protective principle let us as far as possible have the protective rate appear in the law as protection and not concealed in the compensatory rate. This concealment of protection is a weapon used constantly by free traders against the protective policy. We know that because of the wide variation in fabrics it is impossible to frame a compensatory tariff that will be accurate in all cases. But it is easily possible to obtain greater uniformity than is afforded by the present law. The problem is especially complicated in the case of carpets because of the mixture of cotton, jute, linen and carpet wool yarns in this class of goods, and of the fact that a duty per square yard of carpet is to compensate for a duty per pound of wool. We are not as confident as Mr. McNeir appeared to be, that he can solve this question satisfactorily, our doubts having been increased by his citing the rates in the McKinley bill as a satisfactory solution. But his and other schedules will be studied with interest and doubtless subjected to the easy and effective tests to which we have put the Dingley rates in the above and January calculations, which are summarized as follows:

	Dingley Duty			Actual		
	Compensatory	Protective		Compensatory	Protective	Total Duty
A 25 Wors. Serge	50.6	55		24.1	81.5	105.6
A 96 Cotton Warp Dress Goods	73.7	50		19.9	103.8	123.7
C 96 Wors. Dress Good	46	55		26.8	74.2	101
E119 Wors. Serge, Piece dyed	44.3	55		25.6	73.7	99.3
A220 Cotton Worsted	77	50		6.8	120.2	127
A207 Cotton Warp Casket Cloth	85.2	50		44.8	90.4	135.2
608 Piece Dyed Kersey	55	55		33.8	76.2	110
E 382 Cotton Warp Beaver	102.7	50		23.6	129.1	152.7
E24 Irish Frieze	93.5	50		34.8	108.7	143.5
A211 Woolen Cassimere	42	55		41.6	55.4	97
D. E. Woolen Dress Goods	41.2	55		40.8	55.4	96.2
A412 Mohair Plush	36.2	55		12.8	78.4	91.2
A413 English Super Wilton Carpet	32.1	40		15	57.1	72.1
A414 English Best Brussels	36.7	40		17.5	59.2	76.7
A415 English Stout Brussels	55	40		13.1	81.9	95
A416 English Tapestry Brussels	42	40		9.2	72.8	82
A417 English Tapestry Brussels	70	40		7.3	102.7	110

THE WOOL GROWERS.

The hearing on Feb. 10th ended with Mr. McNeir's testimony, but a week later, on Feb. 17th, the Committee listened to a statement by Gen. Charles H. Grosvenor, of Ohio, who represented the wool growers, particularly of his own State. His record as a soldier, his long and honorable service in Congress, which we hope is but temporarily interrupted, his wit, eloquence and great ability, command the respect of all and make it always an unpleasant task to differ with him on any question. His statement on the tariff question on Feb. 17th excites not only regret, but astonishment that such a man could make such a plea. The most reasonable explanation is that he stood before the committee as a paid attorney without evidence or argument to support a case he did not understand. Here are some passages from his examination, on which comment is superfluous:

Mr. Clark—Let us hear what your contention is. Are you contending now that frauds occur by bringing in what is actual wool for making clothes under the guise of carpet wool?

Mr. Grosvenor—Under the guise of carpet wool and under the guise of rags and under the guise of noils, which you know is the refuse, bringing them all in under the head of refuse. Here (exhibiting) is a prepared wool all ready for manufacture.

Mr. Clark—That is the top?

Mr. Grosvenor—Yes, sir; that is the top. Under the system that has been adopted and which there seems to be no possibility of getting clear of unless we can get some legislation, I transform that into waste (tearing a piece of top apart).

Mr. Clark—That is such a transparent fraud that it should not deceive anybody.

Mr. Grosvenor—It is just such a fraud as has injured the people who are raising wool to a degree that is absolutely enormous. Now, it is proposed that this stuff be put into a subdivision of the bill, repealing the Lawrence feature of the Dingley bill, so as to make it available for these fraudulent purposes.

Mr. Boutell—It appears from some of the testimony, but perhaps that has not been written up, that all of the raw wool coming from abroad, or at least all of that which comes from England, is purchased at public auction, the weekly London wool auction, where the American buyers buy most of the wool, so that it is absolutely impossible to make an undervaluation. In other words, the Government is in possession of the exact public figures that are paid at the wool auction, and if that is the case what is the objection to an ad valorem on the raw wool right through?

Mr. Grosvenor—I cannot meet an argument on that question, but my objection would be that the present condition of things has worked admirably and there is no occasion to go speculating out in an open sea when the country is standing paralyzed waiting for some relief from this committee.

Mr. Clark—With all this mass of stuff on the statute books it turns out that you can take two bundles of the very same grade of wool and one of them will wash out 80 per cent. of dirt, and the other only 16 per cent.

Mr. Grosvenor—That depends greatly on the country where it comes from. There has never been any complaint until this attempt has been made before this committee to render unsatisfactory the system of duties in the Dingley bill upon that very question. This trouble about the two grades, 15 per cent. on one and 30 per cent. on the other, has all come about here. Nobody ever heard of it before. There has been no complaint about it, but it is an attempt to mystify and confuse counsel in this particular juncture of the wool interests here.

Mr. Clark—I will tell you how it got here. There is no mystery about it. Mr. Moir, representing all the woolen manufacturers, as he claimed, originally interjected that proposition into the hearings here by means of a letter which later the chairman incorporated into the testimony of Mr. Whitman of Boston, at my suggestion. That is the way the question came before this committee. It turns out, I do not know whether you know it or not, that they have fallen afoul of each other, the woolen manufacturers and the worsted

manufacturers; one of them wants ad valorem rates and the other wants specific rates.

Mr. Grosvenor—We have been swindled always when we attempt to get ad valorem rates upon any article that is changeable in its value or uncertain in its value, or anything of that character. Wherever specific rates of duty can be definitely made, our experience has shown that everybody understands them and everybody knows what they have got to prepare for.

Mr. Underwood—You are complaining that you are swindled now under the specific rate?

Mr. Grosvenor—We are, undoubtedly. You cannot get anything perfect when foreign manufacturers or their representatives in this country are involved.

This is a sample of Gen. Grosvenor's statistical premises and conclusions:

Assuming that all of the third-class wool imported into the United States goes into carpets (which statement cannot be substantiated) and that a like quantity is manufactured into carpets and rugs in the outside world, we have a total use of the world's wool production of wools of the third class of 180,676,568 pounds. This is the maximum quantity annually used in the whole world for the manufacture of carpets and rugs. If you subtract this sum from the 675,410,000 as classified under the McKinley Act, including wools of like character that were transferred from wool of the third class as classified under the McKinley Act to wool of the first class of the Dingley Act, we have a total of 485,733,432 pounds of low-grade wools of the world's production that could not possibly find use in the manufacture of carpets, and which are used for blankets and clothing.

Now, if nearly 500,000,000 pounds (485,733,432 pounds) of wools of the third class, or wools of like kind and character to wools of the third class, are used for blankets and clothing purposes outside of the United States, what folly it is for witnesses to come before your committee and assert in the face of these facts that no wool of the third class is used for clothing purposes.

And here is the substance of Gen. Grosvenor's case:

Mr. Boutell—Your position is that you do not want any change?

Mr. Grosvenor—Not in the leading character of wools; no, sir. The present tariff is stimulating the growth of the industry, and if we have another war we will want some wool of our own. We are getting the Navy Department ready—that is, we were until last night, when we got a little setback on that subject, and it is hardly worth while to try experiments.

The wool growers of the United States most emphatically record their protest against any monkeying with the compensatory duties, as arranged by Mr. McKinley and Mr. Dingley. The weight of the testimony of manufacturers and wool experts is overwhelmingly strong in support of the practice of applying the duties on the basis of an average use of 4 pounds of unwashed wool to 1 pound of finished cloth. The majority of foreign wools of merino blood require more than 4 pounds of unwashed wool to 1 pound of finished cloth. While there are some wools that require less than 4 pounds of unwashed wool to make 1 pound of finished cloth, they are only obtained by going over the wool production of the world with a fine tooth comb.

THE TARIFF ON WORSTED YARN.

There have been a number of written statements filed which are deserving of notice. Wm. H. Grundy & Co., worsted spinners, of Bristol, Pa., submitted a statement of the cost and shrinkage of 1,000 lbs. wool manufactured into yarn, with the object of showing that 3 1/2 to 1 ratio is not excessive for worsted yarn. The statement is rather involved, some figuring being necessary to reveal what would happen to the man referred to in this extract:

You will clearly see from this what would happen to a man importing a 65 per cent. shrinkage wool for the purpose of making worsted yarn as against the finished yarn coming through the custom house out of similar shrinkage wools at a compensatory duty of three and a half times the duty on unwashed wools, or 38 1/2 cents.

The Grundy statement shows a ratio of 3.9 between the grease wool and yarn. Nothing is said about yarns made from lighter shrinking wools and from mixtures of wool and other materials. Brooks Stevens, treasurer of the United States Bunting Co., Lowell, Mass., filed a detailed statement showing the construction and comparative English and American cost of a fine worsted coating made of heavy shrinking wool. It contained a mass of technical details of manufacturing calculated only to confuse and scare the Committee. The pith of it is that with 11 cents duty on wool the Dingley compensatory is but slightly in excess of that actually required. Mr. Stevens calculated the comparative cost of the yarn at $1.50 per pound in the United States and 99 cents in England, assuming the difference in the cost of the wool to be equal to the duty, and then deducted 7 1/2 cents per pound from the English cost because the wool was still cheaper in England. Following is Mr. Stevens' explanation of this allowance, which illustrates in a striking way the inequalities of the present wool duty:

This allowance is made because wool suitable for importation is not in large supply and is therefore increased in price by the demand from the United States. The heavy and greasy wools which

cannot be imported, because of the specific duty, are correspondingly depressed in price.

COMPENSATORY DUTIES.

The National Association of Wool Manufacturers filed a number of long supplemental statements on various phases of tariff revision, among them being one dealing with the compensatory duties. It adds nothing new to the first brief on the same subject from this association, unless we except the theory advanced by F. C. Fletcher, of the Pocasset Worsted Co., that lowering the duty on wool from 11 to 8 cents a pound would make it necessary to have a higher ad valorem duty on worsted yarn to compensate the spinner for this drop:

> Roughly speaking, I find that the labor costs in our own mill are about 130 per cent. higher than the costs are given. I think it is fair to assume that general fixed charges in this country are about double what they are in England. In tabulating some of these figures I seem to find that if the duty on wool is dropped from 11 to 8 cents, it will be necessary to have a larger ad valorem duty on worsted yarn in order to compensate for this drop, especially on yarns from 40s up to 70s.

The compensatory duty on yarn is specific. The ad valorem duty is protective. Lowering the duty on wool would not reduce the valuation of foreign yarn. If it had any effect it would be to increase the foreign valuation by increasing the cost of wool to the foreign spinner.

HEAVY SHRINKING WOOL.

In a letter filed by the National Association of Wool Manufacturers, the Erben-Harding Co. make a very clear statement as to the exclusion of heavy shrinking foreign wools by the present tariff. The present specific duty on wool regardless of the shrinkage raises the cost of the light shrinking foreign wools to the American buyer, and lowers the cost of the heavy shrinking wools to the foreign buyer. We have seen no clearer or more convincing statement of the conditions against which the carded woolen manufacturers protest than this by the Erben-Harding Co.:

> We are compelled to purchase wools that give a high yield, and these high yields make it seem as if three times the wool duty on scoured wools per pound was much more than what our manufacturers required. It will be seen from the table, however, that when we were paying respectively, 62 3/4 cents, 58 1/3 cents, and 52 1/2 cents for qualities 70, 64, and 58 on a scoured basis, no duty figured, the European manufacturers at the same sales were buying wools of similar character and quality all of 10 cents per pound less on a scoured basis. Take the price of tops in Bradford in October, 1908, and these prices included the cost of making, at the same time, October, 1908, wools were being purchased in Australia at prices that enabled the European manufacturers to sell at these low prices; yet, owing to the character of the wools, low yields, etc., though our company had orders in Australia, not a bale was purchased for our account.

The brief gives reports on shrinkages from yarn to cloth, from grease wool to yarn, and from grease wool to cloth, the latter consisting of heavy shrinking wools and the results, of course, agreeing approximately with the existing legal ratio of 4 to 1. In view of the fact that schedule K with its 4 to 1 ratio covers light as well as heavy shrinking wools, and mixed as well as all wool goods, the omission of reference to light shrinking wools and mixed goods from the briefs of this association is noteworthy.

MOHAIR.

Plush for car seats is made from mohair and cotton. Here is the comparison of the legal and actual compensatory and protective rates on a fabric we have analyzed. The actual ratio between the grease mohair and mohair in the cloth is 2 1/8 to 1; the ratio between the grease mohair and the total weight of cloth, cotton as well as mohair, is 1 3/10 to 1:

A412. Mohair plush for car seats. 14 1/2 ozs. per yd., 28 in. wide. 10,000 yds. $1.10, $11,000. 9,062 lbs. cloth. This requires 11,762 lbs. raw mohair, and 3,534 lbs. cotton yarn.

		%
Dingley duty:		
9,062 lbs., 44c.	$3,987.28	36.2
55 per cent. of $11,000	6,050.00	55
Total duty	$10,037.28	91.2
Compensatory required:		
11,762 lbs. mohair, 12c.	$1,411.44	12.8
Actual protection	$8,625.84	78.4

Mohair and its products furnish striking illustrations of the inequalities of the present schedule K. Turkish mohair shrinks about 10 per cent. in scouring. The duty is 12 cents a pound, which, with a shrinkage of 10 per cent., amount to 13 1/3 cents a scoured pound. Thus the growers of mohair in Texas have a protection of only 13 1/2 cents a scoured pound against the Turkish grower. On the other hand there are many grades of foreign wool shrinking 75 per cent. or more in

scouring, on which the duty is 11 cents per grease pound or 44 cents per scoured pound, and which would come into competition with Texas wool. They do not come into competition with Texas wool because the 44 cent duty is so high as to prohibit their importation. Thus the grower of Texas mohair has a protection of only 13 1/3 cents a scoured pound, while the grower of Texas wool has a prohibitory protection of 44 cents a pound.

If a prohibitory duty on raw wool and mohair is the thing, then say so, and put up the duty on mohair to the prohibitory point. But if the object of the new tariff law is to afford reasonable and adequate protection to all American producers, then let some means be devised by which the tariff on light shrinking wools and mohair will be raised, and that on heavy shrinking wools lowered so as to bring both to a fair and adequately protective level. Regardless of any anticipated discrimination in the next world let us give the sheep and the goats the same chance in this one.

EARNINGS OF TEXTILE MILLS.

A brief on the earnings of textile mills was submitted by the National Association of Wool Manufacturers, including an elaborate statement compiled by a Boston statistician, giving the capital, dividends and market value of stock for forty-five textile manufacturing corporations since 1889, with an aggregate average capital of $77,000,000. This statement may be of some value as a general financial view of incorporated textile companies, but it has no perceptible bearing on schedule K. Thirty-eight of the forty-five are cotton manufacturing corporations; four manufacture both cotton and wool goods; while only three make wool goods exclusively. One of these three is the American Woolen Co., with a capital of $22,375,000. The brief also includes statements by three other Boston accountants, giving yearly sales and earnings for three wool goods mills, of which the identity is not disclosed. The object of these various exhibits was to show that the profits in manufacturing wool goods are not excessive. A much better showing would have been made if the cotton mills had been omitted and a record of the carded woolen mills presented instead. Of course it is impossible to state the capital and earnings in this branch of the business because so many of the mills are operated by individuals. But the vicissitudes of our woolen mills and the present stagnation of business among them, over 40 per cent. of the carded woolen machinery in New England having been reported idle in January, would have carried conviction to the Committee, whereas the brief under consideration is calculated to excite curiosity as to why it was compiled and presented at the present time.

TARIFF RATES AND COST DIFFERENCES.

The longest brief, filling twenty-one pages, filed by the National Association of Wool Manufacturers, was an elaborate criticism of the report and testimony of U. S. Special Agent W. A. Graham Clark on the wool manufacturing industry of England and the United States. Some time before Mr. Clark was assigned to the investigation of the Yorkshire industry, the Chief of the Bureau of Manufactures, who had been requested by the Ways and Means Committee to make an investigation of foreign cost of production, wrote to us asking for suggestions as to the information that was required relating to wool manufacturing. Here is our reply:

Boston, Mass., July 25, 1908.

Major John M. Carson, Chief, Bureau of Manufactures, Washington, D. C.

My dear Sir: I have yours of the 23d inst., inviting me to make suggestions as to information that it is desirable to obtain in regard to the woolen industry in foreign countries in order to aid the Ways and Means and Finance Committees in revising the tariff. I am vtry glad indeed that you have started such an investigation. In former letters during the past year or two I have outlined the kind of information that in my opinion was needed for the purpose of revising the tariff schedules. Possibly I cannot do better now than to confirm previous letters, particularly the one dated May 23, 1907, and to offer some more detailed suggestions regarding a particular grade of wool goods, letting them illustrate the general idea regarding inquiries into other branches of the wool industry. For this purpose I will select a piece dyed worsted serge, a specialty of Bradford mills.

1. The first thing is to get full information regarding the cost of producing the wool, the raw material, in foreign countries and the United States. The growing of wool must be considered as a component part of the wool industry, and the facts regarding its production are as important as those affecting manufacturing processes. Do not

make the mistake of neglecting this branch of the business. The desirable information will include detailed statistics regarding the growing of wool in foreign countries, wages, cost of land, taxes, etc. Also get record of fluctuations in prices of a few standard grades of wool and worsted top.

2. Wool Sorting: Wages, production, cost per unit of production (say 100 lbs.) and conditions of employment.

3. Wool Scouring: Wages, machinery, help required, production per man or machine, cost per unit of production. Conditions.

4. Carding and Combing: Kind of machinery, giving essential details regarding dimensions and construction. Wages of overseers and different classes of machine tenders. Production of machine and cost per unit of production. Fluctuations in market prices of worsted top for last 10 years. Particulars regarding Bradford methods of mixing wools to get certain grades of top.

5. Drawing: The same particulars regarding wages, machinery, working conditions and cost per unit of production as I have outlined in preceding paragraphs.

6. Spinning: Same.

7. Warp Preparation: Same.

8. Weaving: Same. Find out how many looms are run by one weaver. Kind of looms used, stating width, speed and percentage of theoretical production obtained on typical fabrics. Give weavers' price lists, and separate statement of weavers' wages and daily wages of weave room hands who work by the day, such as overseers, loom fixers (tacklers), drawers-in, yarn carriers, etc.

9. Dyeing: Same general details. Get information regarding cost of dyestuff, if possible on such standard grades as will enable American manufacturers to make comparisons of prices charged in England and the United States by German manufacturers of artificial dyestuffs. This is a very important point on which nothing is now generally known.

10. Finishing: Same general details.

11. A statement of the general organization and subdivision of the Bradford worsted industry.

12. Methods of marketing the products, whether partially manufactured or finished.

13. Cost of machinery in the different departments.

14. Cost and kind of power and fuel.

15. Statements of cost from particular mills.

16. The same information regarding allied industries, particularly textile machine building.

17. English dumping methods.

18. Condition of Bradford trade, past and present.

This is an outline, necessarily incomplete because of the extent and intricacy of the subject, of my idea of what is required from Bradford regarding worsted serges. In preparing it I have kept in mind the doctrine of tariff revision as announced on the Chicago platform and by Mr. Taft personally, which is that the tariff ought to be sufficiently large to measure the difference in the cost of production between the article in foreign countries and in America, this difference to include a reasonable and ample profit to the manufacturer in America. If the tariff is to be revised on those lines the legislators must have the information stated above about all the products on which a duty is to be placed. Personally I want to take this opportunity of stating my opinion that it is impossible to get the required data.

The facts are known only to foreign manufacturers, and to them only imperfectly. No sane man with the slightest acquaintance with British manufacturers and merchants believes that they will state what they know about the facts for the purpose of helping Americans to frame a tariff to keep their goods out of our market. Moreover, this information is only half of what is needed. We must have the same data relating to the American trade. And if my life depended on getting one or the other I would choose the job of getting the information from England. The average American manufacturer will not give you the information even when it is to be used for his own benefit. I thing I wrote you about this in connection with our investigation of German dress goods a few months ago.

The principle of tariff revision as formulated by Mr. Taft and the Republican party is impossible of application. It is absurd. It is an attempt to determine the value of an unknown quantity from three other unknown and unknowable quantities. For example:

Let v = Cost in America
w = Cost abroad
x = Reasonable profit
y = American duty.

Then the problem is to find the value of y from the following equation:

$$v - w + x = y.$$

This is the problem for which the Republican party under the leadership of Mr. Taft has so airily promised a solution after election. We must remember, however, that platforms are made for getting in, not for riding on. We must take the matter seriously for the present, and it is for this reason that I have given you above a statement of what is wanted from Bradford on one grade of goods. The shoddy trade of England should receive your special attention, as it is of great importance that the United States should be protected against the cheap goods in which Yorkshire leads the world.

While I have little faith that Mr. Pepper or in fact any one can get the information required, I look forward to his getting much that will prove of value. He will be handicapped by having his mission known. The work really belongs to the secret service.

I want at this time to congratulate you on the practical way in which you are taking up this line of work. Your bureau seems more like a business concern than a government department and I have written to you with the freedom with which I would address a textile manufacturer.

Wishing you success and assuring you of my willingness to cooperate in any way possible, I remain,

Yours very truly,
Samuel S. Dale,
Editor.

We never had the slightest faith that the investigation would disclose the information required for the revision of the Dingley tariff in accordance with the Chicago platform. At the same time we believe Mr. Clark deserves great credit for the work he did in England. The information he obtained shows that he must be industrious, conscientious, tactful and possessed of a good general knowledge of textile manufacturing. That his reports contain inaccuracies is not surprising. The surprise is that they do not contain more, considering that he tried to accomplish in two months something that is far beyond the limits of the possible, regardless of the person who makes the attempt or the time at his disposal. It should also be considered that his report has been hurriedly compiled, while his testimony before the Committee, given amidst the confusion of a public hearing, is available for criticism only in the form of the first print of the stenographer's report, which is subject to correction. We have attended all the textile hearings personally and we have found many errors in the first prints of the reports. This is true of the testimony by two of the thirteen who sign the detailed criticism of Mr. Clark. We feel a certain confidence that upon reflection they will recognize they have treated Mr. Clark's report in a way to which they would object if it had been employed in the analysis of the first print of their own testimony. There is no doubt but that some one has blundered in this investigation of foreign costs, but the "some one" is higher up and not the subordinates in the government service who obeyed impossible orders faithfully and intelligently.

JUDGING THE WHOLE BY A PART.

This ends our review of the testimony submitted to the Committee on Ways and Means. The men who submitted it have almost without exception been financially interested in the revision of the rates. It is, therefore, not surprising that there have been such conflicting opinions on apparently simple questions. That conflict does not necessarily mean bad faith on either side. Human nature is such that few if any of us can take an impartial view of a situation in which our personal interests are deeply involved. And in addition to this personal interests another and more potent cause of error is the partial view that his environment forced every witness to take. Each man was a specialist and was unable, even if he had been disposed, to consider the question of tariff rates as clearly from the viewpoint of other branches of manufacturing as from his own with the details which he was intimately acquainted. This feature of the tariff discussion brings to mind these words from Locke on the Conduct of the Understanding:

> We are all short sighted, and very often see but one side of a matter; our views are not extended to all that has a connection with it. From this defect I think no man is free. We see but in part, and we know but in part, and therefore it is no wonder we conclude not right from our partial views. This might instruct the proudest esteemer of his own parts, how useful it is to talk and consult with others, even such as come short of him in capacity, quickness and penetration; for since no one sees all, and we generally have different prospects of the same thing, according to our different, as I may say, positions to it, it is not incongruous to think nor beneath any man to try, whether another may not have notions of things which have escaped him, and which his reason would make use of if they came into his mind. The faculty of reasoning seldom or never deceives those who trust to it; its consequences from what it builds on are evident and certain, but that which is oftenest, if not only, misleads us in is that the principles from which we conclude, the grounds upon which we bottom our reasoning are but a part, something is left out which should go into the reckoning to make it just and exact.
>
> In this we may see the reason why some men of study and thought, that reason right and are lovers of truth, do make no great advances in their discoveries of it. Error and truth are uncertainly blended in their minds; their decisions are lame and defective, and they are very often mistaken in their judgments: the reason whereof is, they converse but with one sort of men, they read but one sort of books, they will not come in the hearing but of one sort of notions; the truth is, they canton out to themselves a little Goshen in the intellectual world, where light shines, and, as they conclude, day blesses them; but the rest of that vast Expansum they give up to night and darkness, and so avoid coming near it. They have a pretty traffic with known correspondents in some little creek; within that they confine themselves, and are dexterous managers enough of the wares and products of that corner with which they content themselves, but will not venture out into the great ocean of knowledge, to survey the riches that nature hath stored other parts with, no less genuine, no less solid, no less useful, than what has fallen to their lot in the admired plenty and sufficiency of their own little spot, which to them contains whatsoever is good in the universe.

THE COMING COTTON CONGRESS AT MILAN.

The sixth congress of the International Cotton Federation will be held at Milan, Italy, on May 17, 18 and 19. The president of the congress will be Baron Costanzo Cantoni, of Italy. A preliminary program has been announced as follows:

First day: Address, by Baron Cantoni; Report of the Year's Work, by C. W. Macara; Reports on Colonial Cotton Growing; Regulating the Cotton Supply by a Reserve, Jean de Hemptinne; Mill Fire Insurance, John Syz.

Second day: Strike and Lock-out Clauses in Yarn and Cloth Contracts; The Cotton Contract; Conditioning of Raw Cotton; Bill of Lading Conference.

Third day: Reports, Resolutions, Levy for 1910, next Congress, and Votes of Thanks.

There will be the usual round of social functions, with visits to cotton mills, and an excursion to the Italian Lakes. Special arrangements have been made with the leading Milan hotels for the accommodation of delegates.

THE NATIONAL ASSOCIATION OF COTTON MANUFACTURERS.

The eighty-sixth meeting of this Association will be held on Wednesday and Thursday, April 28-29, at the Mechanics Building on Huntington Ave., Boston, Mass., by invitation of the Textile Exhibitors' Association, which is to hold its fair at the same time and place. Members of the Association will be admitted to this fair by their badges, which can be obtained outside of the gates, but the guest badges will not be issued as heretofore.

The program includes a report of the Committee on the Standard Specifications on Plain Gray Goods, which committee submitted a preliminary report at the meeting held at Saratoga Springs last September.

The Secretary of the Association is preparing a bibliography of works on cotton manufacturing, and has received about seven thousand titles, of which it is estimated that half are duplicates. This will be submitted by title only as it is a work for reference.

Among other subjects which are expected are: Transportation for Mill Yards, Cotton Futures on the New York and New Orleans Cotton Exchanges, Commutator Grinding, Air Conditioning for Cotton Mills, Finishing and Bleaching, Loom Improvements, Losses in Cotton due to Moisture and other Causes, Additional Top Strippers on Revolving Flat Cards, Scientific Methods in Warp Sizing, Automatic Looms, Economy in Steam Generation, Preparation and Marketing of Cotton to the Factory, Cotton Fiber Substance and its Properties, Advantage of Variable Speeds for Ring Spinning and Later Forms of Spindles.

The Association will be greeted at its first session by Gov. Eben S. Draper, who has been a member of the Association for many years.

THE NATIONAL ASSOCIATION OF WOOL FIBRE MANUFACTURERS.

A meeting of prominent manufacturers of wool substitutes was held in Boston on March 6th and an organization was formed to be called the National Association of Wool Fiber Manufacturers, to protect their mutual interests, foster and encourage the industry and remedy existing abuses, also to disseminate information for the better understanding of their manufactured products on the part of the consumer. There was represented a large majority of the manufacturers engaged in the trade, and favorable responses were received from others unable to attend.

Election was held with the following result:

For President, Bradley M. Rockwood; for Vice President, Charles Taylor, Charles J. Basch; for Treas. and Sec., Fred Rawitser; Board of Directors, J. S. Cordingley, T. H. Gray, H. Carleton Slack, and the officers ex-officio.

There were present at the meeting:

B. M. Rockwood, the Norfolk Woolen Co.; C. J. Basch and F. Murdock, Basch & Greenfield Co., J. S. Cordingley and Al Weeks, W. S. Cordingley & Son; Edward Glueck, the Riverdale Woolen Co.; H. C. Slack, W. H. H. Clask & Bro.; Chas. F. Stirling, the National Woolen Co.; R. Broomfield and E. F. Maguire, the Stoughton Mills; George R. Whiting; O. W. Timmerman, the Adi-

rondack Woolen Co.; S. I. Beaumont, Beaumont Bros.; Thomas J. Sullivan, of R. T. Sullivan & Co.; T. H. Gray and John A. Meskell, T. H. Gray & Co.; Fred Rawitser and William Rawitser, the South Acton Woolen Co.

Committee appointed to draft by-laws and rules for the Association: H. C. Slack, Thomas J. Sullivan and Fred Rawitser.

SEASONABLE FABRICS.

DRESS GOODS.

Both the domestic selling agents and the importers of dress goods are enjoying a very prosperous spring dress goods season. During the early part of the season the buying trade were not anxious to place their orders except for the numbers they would need to open up the season with. This has caused an early rush of reorders which has kept the manufacturers busy with all of their looms to supply the demand.

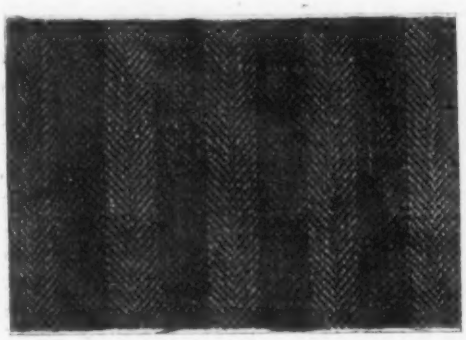


FIG. 1.

The demand for light weight satin-faced materials such as prunellas has been one of the features of the market, in grades ranging from 65 cents to $1.10 a yard. The cutting-up trade are using all of this class of merchandise that can be had in all of the spring shades, of wisterias, resedas, stone grey, navies and black, some of which are very scarce.

The trade are calling for serges in navy, cream and black in qualities costing from 65 to 90 cents a yard.

In the fancy dress goods market piece dyed fabrics are the most popular. These fabrics are being used very extensively for street gowns with neat stripe effects in soft satin faced materials in qualities costing from 57 1/2 to 85 cents a yard. Piece dyed worsteds continue to be very strong in the chevron and diagonal stripes. Fig. 1 is a neat 54-inch stripe from the collection of Boessneck & Broessel at $1.20 a yard. Fig. 2 shows a 54-inch three-color combination from Franz Merz at $1.20 a yard.

Several of the manufacturers of dress goods who sell the large jobbing trade only,

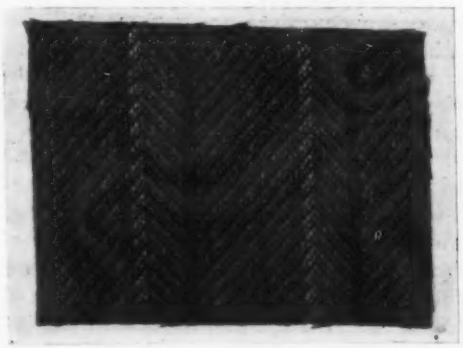


FIG. 2.

report that they have taken a great many large orders for next fall deliveries. The lines that are being displayed for the coming season are very similar to those of last fall. Stripes will be favored, with checks and plaids being more popular than last season.

SILKS.

Conditions of the silk market continue to be very active in all branches of the trade.

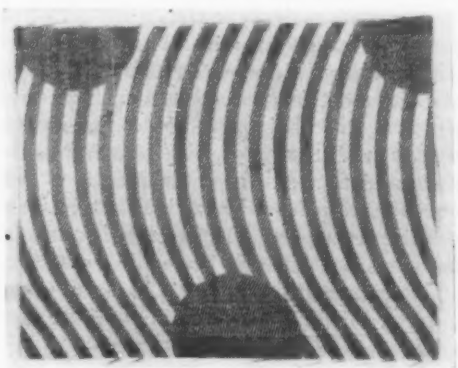


FIG. 3.

The increased demand for all grades of silks has been greater by far than during any previou season. As silks will continue to gain favor as the season progresses, it is evident that the popular weaves and shades

will be scarce. At the present time the market is short many thousands of pieces, especially in the soft satin faced fabrics.

A great many buyers from all sections of the country have visited the silk market during the past few weeks, endeavoring to supply their wants for their spring trade. Most of these buyers did not place their usual spring advance orders, but held off until they reached the market, thinking that they would find the market well supplied with all of the desirable merchandise that they desired. While these buyers were able to secure only part of their orders at once, they cleaned the market out of all of the leading spring fabrics and popular shades.

Messalines and other satin faced silks continue to be very active in all of the new spring shades. Old rose, ashes of roses and the different shades of blue are the most favored. The manufacturers making these goods are running their looms to their full capacity but are many pieces short in supply.

The demand for rough pongees is much greater than the supply, the leading shades are scarce in all grades of rough pongees. Some of the mills are sold ahead and cannot make deliveries in less than four to six weeks.

Black and plain colored taffetas are gaining favor for immediate shipments. The demand on these goods has been increasing. Stocks are low, as most of the manufacturers have had their looms running on other silks that are in demand.

In the fancy silk market foulards continue to be the most favored for the spring trade. Requests are being received for these foulards in all the new spring shades in neat stripes and figures. Fig. 3 shows a 24-inch all over pattern from Valentine & Bentley at 57 1/2 cents a yard. The demand for fancy taffeta has not been as large this season as in former years. The trade has taken strongly to fancy messalines in all of the new shades.

COTTONS.

Cotton goods continue to show the improved conditions that have prevailed during this season. The buyers of domestic cottons who have been going slow with their orders for some time have started in to order their goods in large quantities both for their immediate and future wants, as they realize that they must operate now to secure prompt shipment. A report from the manufacturers of staples shows that the demand exceeds the supply by many thousands of cases, and no relief from these conditions can be expected for some time to come.

The demand on apron ginghams during the early part of the season was so great that the market is sold entirely out of these goods and are many cases short in delivery. The jobbers are booking orders for these ginghams at value, with no deliveries in sight. From the present outlook it is very evident that this scarcity will continue for some time, as the mills that are making apron ginghams are using their looms for other fabrics which are more profitable to make.

Like all other branches of the cotton goods trade, the sheet and pillow case market is in a very prosperous condition. The mills are sold ahead and are using every effort to fill the orders they have on hand, but the demand has increased for these goods in the popular sizes to such an extent that some of the mills have withdrawn their lines.

The weather conditions have helped to increase the wash goods trade this season. The early spring reorder trade has started in with considerable activity. Printed lawns and batiste are selling freely in the staple dots, checks and stripes. Side bands continue to be in demand.

The trade has taken very strongly to printed galatea cloths this season. These are printed in a number of new designs in the new shades and are attractive for children's wear.

C. L. Bausher & Co., agents for the Amoskeag Mills, have made the following prices for fall: Amoskeag 1921 outings at 7 1/2 cents. Teazledowns at 8 1/2 cents. Daisy flannels, 8 1/2 cents. These prices are all subject to a trade discount of 5-5 and 2 1/2 per cent.

The demand for mercerized fancies has been one of the features of the white goods market this season. Cross bar and checked lawn continue to be very active.

CORRESPONDENCE AND NOTES

Upon Textile Topics At Home and Abroad.

RIBBON WEAVING.

BY OTTO BOTH.

(Translated from Die Bandweberie.)

(Continued from February.)

TUBULAR AND DOUBLE WEAVES.

These weaves produce two separate fabrics, one above the other. The two fabrics may be woven entirely separate without being stitched at all, or they may be stitched

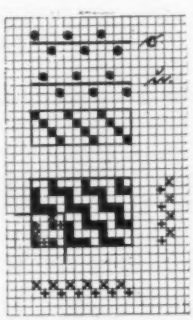


FIG. 48.

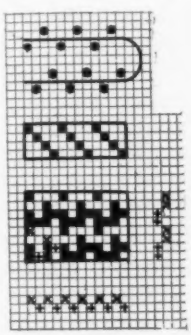


FIG. 49.

together on one or both edges of the fabric. The two fabrics are woven entirely separate when one shuttle is used for the face filling and another for the back filling. This method, however, is seldom used in the manufacture of ribbon. If the two fabrics are woven with only one shuttle, one face pick alternating with one back pick, a tubular fabric is produced, being stitched on both sides. If only one shuttle is used, two back picks alternating with two picks on the face, a double cloth is produced stitched on one edge only.

The warp threads in these weaves are divided into face and back, the former intersecting with the face picks only, and the latter with the back picks. All the back warp threads must be lowered at every face pick. If any back warp threads should be raised over a face pick it would stitch the face and back fabrics together. All the face warp threads are raised above every back pick, otherwise the two fabrics would be stitched together. It should be borne in mind that the face warp shows on the face

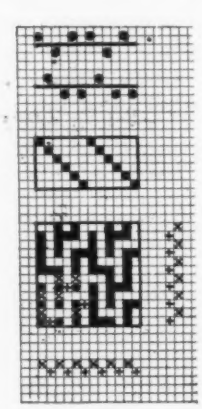


FIG 0.

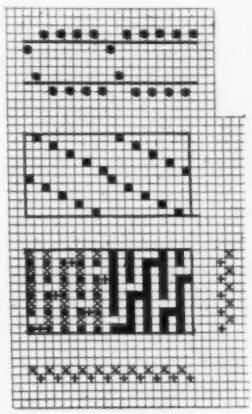


FIG. 51.

when raised above the face picks and that the back warp shows on the back when lowered below the back picks. If a double cloth is to be woven so as to show a 4-leaf twill on both sides of the fabric, the face warp must intersect the face filling as follows: 3 up 1 down; the back warp on the contrary intersects the back filling in this order: 3 down 1 up. In drafting a weave for double cloth the face and back threads are first indicated in the desired order. Then:

1. The face warp is raised above all of the face picks.

2. The face weave is marked on the face warp and filling threads, care being taken to have all the back warp threads below the face picks.

3. The back weave is drafted on the back warp and filling threads.

If stuffing threads are used they must be raised above the back picks and lowered below the face picks. In the accompanying drafts the mark × at the bottom of the draft indicates a face warp thread; at the right of the draft, a face filling thread. The same mark, ×, in the weave draft indicates that a face warp thread is raised above a face filling thread.

The mark, +, at the bottom of the draft, indicates a back warp thread; at the right of the draft, a back filling thread. In the weave draft the mark ● indicates that a face warp thread is raised above a back filling thread. Fig. 48 shows two separate taffeta weaves, one above the other. The drawing-in draft and cross section of the fabric are shown above the weave. The section marked (o) indicates the position of the warp threads at a face pick; the section marked (u) indicates the position of the warp threads at a back pick. Fig. 49 is a double plain weave. Fig. 50 is a double cloth with a 3-leaf warp twill on both back and face. Fig. 51 is a double cloth with a 5-leaf warp satin weave on face and back.

TUBULAR SELVAGES.

An important feature of ribbon weaving is the construction of tubular selvages which are classified as follows: Tubular, half tubular and three-quarter tubular. The tubular edges consist of a face and back weave with the same number of warp threads. The half tubular selvage has a face and back filling but has warp threads only on the face. This leaves the back filling floating across the back of the selvage. The three-quarter tubular selvage has a face and back filling as well as a face and back warp, but the greater number of warp threads are woven in the face of the selvage. Strictly speaking a three-quarter tubular selvage has three times the number of warp threads on the face as on the back, but in practice the term "three-quarter tubular" is applied to all selvages in which there are more warp threads on the face than on the back. The tubular selvage is used for the better grades of double weave ribbons. Single weave ribbons, on the other hand, are usually woven with one-half and three-quarter tubular selvages.

(To be continued.)

ENGLISH NOTES.

(By Our Special Correspondent.)

In the January "English Notes" reference was made to A. A. Haworth as a Manchester M. P. connected with R. Haworth & Sons. This was an error as Mr. Haworth has no connection with the firm mentioned, but is head of the firm of Messrs. James Dilworth & Son, which is among the oldest and largest firms dealing in yarns.

The weak spot generally in the textile situation is in the demand for goods. More looms are working in Lancashire than for a long time, but prices are poor. Woolen, worsted and dress goods looms are mostly in a hand-to-mouth condition. Worsted combers and merino spinners are busy but orders for crossbred yarns hang fire. Top-makers are very firm and confident and some anticipate great things after the end of March. The idea is common that the end of this month will show definitely how 1909 trade is to go.

* * *

Smart and highly finished plains and phantom stripes are all the vogue in dress goods for this spring. A silk-faced wool-backed satin is popular, but too expensive at 55 cents for the bulk trade. Wool sateens at 28 to 30 cents are in high favor and makers of them can have all the work they want. The colorings are brighter and especial favorites are mole and elephant colors, copper, beech and navy-slate. England has done with soft and dull dress fabrics for some time to come.

* * *

A design in worsted suitings which carries all before it is the "regatta stripe"; it succeeds and improves upon "zebra." The name is itself a seller and the stripe design showing black or color alternating with grey has character too. A pattern is sent of the original to the Textile World Record office. Variants on the same idea have effect threads in the warp to make a subsidiary line stripe. The pattern is distinct without being staring, it sells in 16 and 20-ounce weights and is a double cloth. To avoid fine spinning for the lighter weight the style has been imitated and on these cheaper lines there is a long run of popularity in sight for regattas more or less ornamented.

A very mixed lot of financial results follow on last year's textile working. For the reason that the cotton spinners carried forward large hidden reserves from the boom days their generally good dividends are misleading. Working losses are said to have been formidable for the Calico Printers' combine, the Bradford Dyers are well assured of reduced profits. On the other hand Woolcombers, Ltd., pay 10 per cent. Lister & Co., the chief silk firm, pay 4 instead of 6 per cent. and pass the reserve. Crossleys, the chief carpet firm, lose $100,000 on the year. Cawthra's & Leigh Mills, typical Bradford firms outside the luster trade, do as well or better than ever. Rylands', the chief distributing house in the home trade, reduce their dividend by 2 1/2 per cent. and withdraw $125,000 from reserve. A. & S. Henry's, principally an export house, have little better than half the amount of profits made in 1907. Mark Oldroyd's, a Dewsbury tweed firm of the most efficient type, pay 7 1/2 per cent. and explain that the profit is a "buying" profit, i. e., is due to cheaper wool and materials. The contrasts might be added to, but enough have been given to show that not all have fared alike during the depression.

* * *

The casein waterproof finish for cloth has been the subject of some academic talk, but experiments have not been encouraging in practice. Casein (milk cured) costs $150 to $200 a ton and is costly to dissolve. Quicklime and water can be used for gray goods, but of course not for colored fabrics. For the latter the solvent used is formaldehyde, the fumes of which are nothing less than suffocating. The casein has then to be precipitated in an insoluble form and although this can be done readily the deposit does not fix itself. The cheese dust disappears after a vigorous beating or shaking. There is a patent on the use of casein, but it is not known to be worked actively. Casein emphatically cannot be said to be in a position at this stage to replace rubber.

* * *

In defense of English slubbing dyeing, of which some defects have been noted, a dyer comes with an explanation. It seems that they will dye as well as anybody in America if customers will pay one-half cent per pound more than at present and order in a different manner. The mill sends to dye 1,000 pounds or other lots in round numbers. The dyer makes up a bath for two-thirds of the weight to match the pattern more or less. In the interests of speed and economy he relies on "blocking-up" the difference with the remaining material. Thus 800 pounds of olive that is too red is corrected by gilling in 200 pounds that is too green.

The remedy is to order not in thousands, but in machinefuls (4 × 250 pounds or 2 × 500 pounds) each to pattern and to match each other; and to pay for the consequent delay. It is admitted by their friends that some English slubbing dyers have lost practice in the art of fine-matching.

* * *

Finality has not been reached yet by the trade committee dealing with the vegetable fiber in wool trouble. Paper-lined bags have delivered their wool in practically perfect condition, but so have the best unprotected jute bags after thorough singeing. The report is dead against lining woolpacks with cotton. Loose fiber from this is even worse to deal with than jute. The committee have now found manufacturers who will cheerfully pay more for yarn that is guaranteed free from vegetable defects. A harder task will be to find spinners who will give the guarantee. Long and bitter experience warns textile traders against warranties they cannot supervise.

* * *

"Willeyers and fettlers"—as the Yorkshire woolen card room hands are known—have formulated a charter. They demand 12 cents an hour, 55 1/2 hours to the week, no night, piece, over or mealtime working and an allowance of one man per set. The terms are not likely to be granted in their entirety. Night as well as day work is more the rule than the exception in the Colm Valley mills producing 37-cent to 70-cent tweeds. The fine and fancy yarns which certain of our spinners are beginning to produce in opposition to the Continent involve

a time in cleaning-up which is grudged by employers. Some of the latter say that long hours and little else give Belgians and Germans their pre-eminence in mixed and fancy yarns. Those mills supply the English weaving market with 20,000,000 to 25,000,000 pounds of yarn per annum, largely for dress goods, flannels and shirtings.

* * *

Our textile societies like to have scientific experts lecturing before them and are shy of discourses that are too much in the nature of advertisements for particular firms. There is the risk that a scientist will be too abstract and learned, but men are chosen who are familiar with the difficulties and errors of the trade. A city analyst in a center like Bradford is naturally well informed on the subject of wool oil. And Mr. F. W. Richardson has warned the Yorkshire managers of textile works against extreme dependence on the free oleic acid factor in valuing olive oil or substitutes for this for worsted combing. He uses the Richardson & Hanson test—passes a hot air current over a shallow layer of oil and notes the viscosities before and after. The drying oils harden, the semi-drying oils turn gummy and olive oil is practically unchanged. The oil that will saponify and not oxidize or dissolve is fairly eligible for the work.

* * *

Fairly constant use is made of the public chemists by textile firms. The chemists have to adjudge causes of change in strength and color, to report on water, starches, dyestuff, oils and sometimes coals. The problems may be complicated as when a chemist has to trace to their cause green stains on aniline dyed drab rubber waterproofs. The analyst tells you that these long and complex researches do not pay him, but success brings reputation and regular supplies of simpler work at $5 a test.

* * *

A Bradford lecture on "Defects of Fabrics" has elicited some curiosities. For instance, cream cashmeres have been spoiled by pink and blue stains which by prolonged examination were traced back to the red and blue stripes of a colonial wool pack. Vegetable fiber strayed into the wool and the cotton colors used in striping bled. Again a manufacturer found cream goods spoiled by fibers from the colored knitting wools brought in by his burlers for the occupation of their spare time.

While some crimping is caused in dyeing or finishing a Bradford Dyers' Association expert has been securing proofs that it is due sometimes to unequal twist in the filling. There was an average shortage of five turns an inch in some crimped places examined by Mr. I. M. Brown. In cotton venetians stripiness in the warp has similarly been brought home to the mixing of yarns of different counts.

A defect not mentioned by the lecturer was detected at Manningham Mills. In a piece of silk velvet the pile was found flat for a square foot or so, except in circular patches at regular distance apart. The defect arose from the accidental presence of a square of perforated zinc in a machine and the accident led to the taking of a patent.

* * *

The latest foreign patent revocation shows that it is not a valid plea to say that you thought it sufficed merely to supply the English public with the foreign-made article. The Comptroller has refused to grant a delay of judgment in which to begin manufacture in England, saying that to do so was to create a precedent whereby all might beg off. The ruling is subject to appeal in the court.

A Berlin "Committee" for the protection of German markets abroad, aggrieved by the Patents Act and other measures, proposes an old form of retaliation. It intends to teach oversea buyers that no little of quasi-English goods shipped from England are of German origin and to put German and foreigner into direct touch. Building of the new factories continues and advertising is being done energetically by companies with room and power to let to small manufacturing patentees.

* * *

The test of statistics throws some curious sidelights on British textile industry. There

is local authority for saying that in twenty years 275 woolen sets and 968 looms have gone out of use in the south of Scotland. There were 1,918 woolen (not shoddy, nor worsted) factories with 3 million and odd spindles in the Kingdom in 1885. The total fell to 1,377 factories and 2,600,000 spindles by 1904. The number of worsted workers fell 12 per cent. between 1889-1899, so that in the last year for which there is definite information the employers in worsted factories are fewer than in 1867. Woolen, worsted and shoddy mills employed 301,000 people in 1889 and some 260,000 in 1901. No official figures are new enough to portray the rise of the cotton industry.

There is a handsome choice of explanations for the apparent decline. Imports have quadrupled in half a century but amount only to $36-40 millions. Foreign tariffs have advanced, machines have an increased capacity. In Scotland manufacturers with small capital could not keep the pace in patterns and credits for the high class trade and could not or did not descend to the cheap tweed business. In the west of England manufacturers cling to old ways until new competition proved too much for most of them. As to present competition in Yorkshire let a voice from Dewsbury speak: "It is no longer competition, but the wilful, wanton degradation of an ancient and honorable industry; a madness destitute of method, denying just reward alike to industry, science and art." Thus Mr. Mark Oldroyd, who nevertheless makes money.

COTTON COMBING.

I find after years of experience that the most important point in getting a good clean combed cotton is in paying strict attention to keeping the half laps clean. Of course this seems a simple matter, but upon going into the majority of mills and on examining the half laps it will be found that there are 4 or 5 rows of needles that are not clean; usually it is the finer needles, say from No. 10 to 17. On turning the combers around until the first row of needles appears, it will be seen that there will be about one-eighth of an inch that the brush does not touch. Some think all that is necessary is to keep the brushes clean. This is not so; the brushes will keep themselves clean if properly set up in place. Boulanger.

FINE ENGLISH WORSTEDS.

From our Special Correspondent in England.

I send you with this letter patterns of some of our really superior worsteds. Note the beautiful finish, which is Farr's of London. It is obtained by a secret process, which actually is a secret, and is not approached by any other finisher. Very few pieces but practically all the best patterns are submitted to this finish, which flattens the cloth and prevents it from taking much harm in handling.

The widths are nominally 58 inches and in practice this is 58 to 60, not 56 to 58. The prices are not on the topmost scale but are those quoted by a firm just outside the very first flight of Huddersfield manufacturers. If you were buying 50 pieces of the same pattern (imitated) by a Bradford maker, you would perhaps do 9d (18 cents) a yard better. If you went to really tip-top people you would have to pay 6s 9d ($1.62) a yard more. The buyer does not care because he can always get his profit on these goods and can rely on an irreproachable delivery. If he buys from somebody who is good he expects deliveries practically equal to the first-class goods at a middle sort of price. If he goes to Bradford he generally gets stuff that falls short of perfection. Quantity versus quality explains the difference.

In technical excellence I suppose the summer-weight stuff especially is better than anything America produces. But if your designer is up to the mark, if you supervise every single detail, using the best Hutchinson & Hollingworth or Hattersley looms, you make money in this trade in England. The firms in it are private ones but I should want a good deal of convincing that better financial results often accrue in America than to firms here on whom I have had an eye the last 10 to 15 years. Owing to long terms and heavy pattern expenses a large capital is wanted. However, with a little

foresight as to the cheapness of labor or the cost of mill property the profit works out all right.

The prices of these four samples are as follows:

11/12 ozs.	$1.14
13/14 ozs.	1.20
14/15 ozs.	1.26
16/17 ozs.	1.32

[Samples of the goods can be seen at our Boston office.—Ed.]

THE CLOTH IN CHEAP SUITS.

TAILOR SUES CUSTOMER.

In the Liverpool County Court recently Judge Shand heard a case brought by Dowling Baxter, "the tailor from London," of 56 Lord St., Liverpool, against P. Freshney, a draper of 81 Stanley Rd., Bootle, to recover £4 os 6d, the balance said to be due on three lounge suits.

The defendant admitted having ordered the suits, which were advertised, he said, as made of genuine woolen cloth, and the price being only 30s per suit, he thought he would have three. He paid £1 by way of deposit, and was measured for the suits, but upon reaching home and testing the cloth samples he discovered they were "pure rubbish," being composed of cotton, and not a particle of wool in them. This being so he was willing to forfeit his £1 deposit, which he considered was all the cloth for the three suits was worth. He cross-examined the plaintiff's representative as to whether when he (the defendant) declined to proceed with the purchase, he had said that he would put the defendant into court, and that his experience in other towns was that County Court judges were no judges of cloth. The plaintiff's representative denied this.

The Judge then quoted the Sale of Goods Act, and then pointed out that it was against the defendant, inasmuch as he admitted having examined the cloth in the shop previous to ordering the suits. "I think," he commented, "you have a very good ground for getting the Sale of Goods Act amended. If you agitate enough I think you might get something done regarding these three suits, but I am afraid that the Act of Parliament as it stands does not help you."

It was stated that the suits had been cut and partly made, and the Judge suggested a compromise. The plaintiff denied the accuracy of the defendant's declaration that the cloths had been represented as being all wool, and stated that he would not arrange any terms with the defendant. His Honor thereupon ordered an adjournment of the case, remarking that the suits must be completed within a week and tendered to the defendant, who, if the fit should then be accurate, would have to pay for the clothes.—The Manchester Guardian.

A HEAD MOTION FOR LOOMS.

The objects of this head motion, recently patented, are to simplify the construction and make it possible to operate the harness and drop box mechanisms either separately or jointly. Fig. 1 is a side elevation of the dobby, showing the shed forming and filling chains; Fig. 2, a plan; Fig. 3, a side view.

The dobby-frame is of the usual construction, and comprises the two side frames in which the shed-forming pattern shaft, B, is journaled and between which the pattern-chain drum, B^1, and its chain, C, are carried. The pattern-chain shaft, B, protrudes at each end beyond the dobby-frame and at one end is provided with an idly mounted worm-gear, B^2, and a friction slip-clutch, B^3, held against the gear by a suitable spring. The worm, D, engaging the under side of gear. B^2, is carried by a short shaft, D^1, which is geared to the crank-shaft, E, of the loom through the sprocket connections, D^2, and gears, D^3, D^4. By means of this gearing the worm-gear, B^2, constitutes a means for driving the pattern shaft, B, through the slip-clutch, B^3, above mentioned.

The shuttle-box pattern-chain, F, is carried by its chain-drum, F^1, on the shaft, G, which is parallel with shaft, B, and, like it, journaled in the side-frames. The lifting levers, F^2, located above the shuttle-box pattern-chain are operated in the ordinary way for controlling the position of the shuttle boxes by means of connections not shown in the drawings. The shaft, G, is longer

than the shaft, B, so that the chain drum, F^1, is offset from the other chain, as viewed

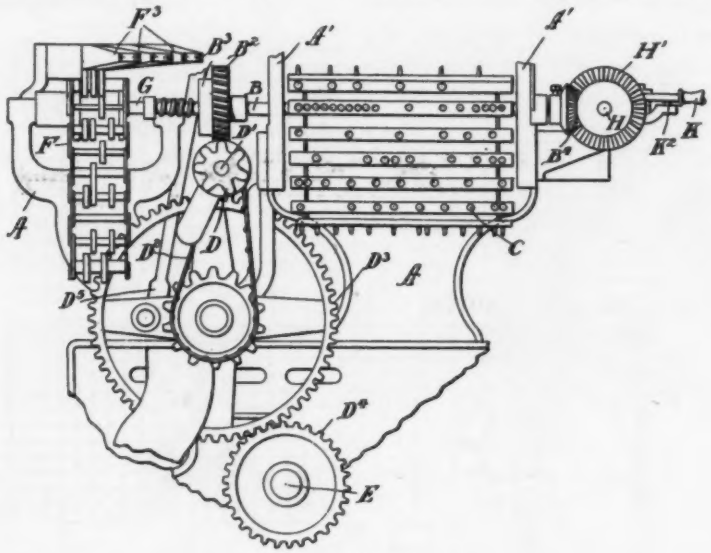


FIG. 1.

from the end of the loom, and is likewise out of the way of the dobby connecting rod, D^5, and other of the driving gearing ordinarily to be found at this side of the dobby frame.

At the opposite side of the dobby frame the two shafts, B and G, are connected by gearing which comprises a short shaft, H, set in brackets on the frame, A^1, and carrying at each end the bevel gears, H^1, H^2, which are in mesh with the pinion, B^4, on shaft, B, and pinion, G^4, on shaft, G. The pinion, H^2, is mounted or keyed upon its shaft so that it may be moved into and out of engagement with the gear, G^4, thus constituting a clutch between the two shafts, B and G, by means of which they may be connected or disconnected as desired.

The shifting mechanism for the clutch gear, H^2, comprises a shipping lever, K, fulcrumed on a bracket, K^1, with one end engaging an annular groove in the hub of pinion, H^2, and the other end fashioned as a handle. A spring detent, K^2, of ordinary construction, is housed within the bracket adjacent to the fulcrum pin of the shipping lever, K, for retaining the same in either its connecting or disconnecting position. The shaft, G, is provided with a hand-wheel or knob, G^3, by means of which it may be manually rotated, and the shed-forming pattern-shaft, B, is also provided with a means for

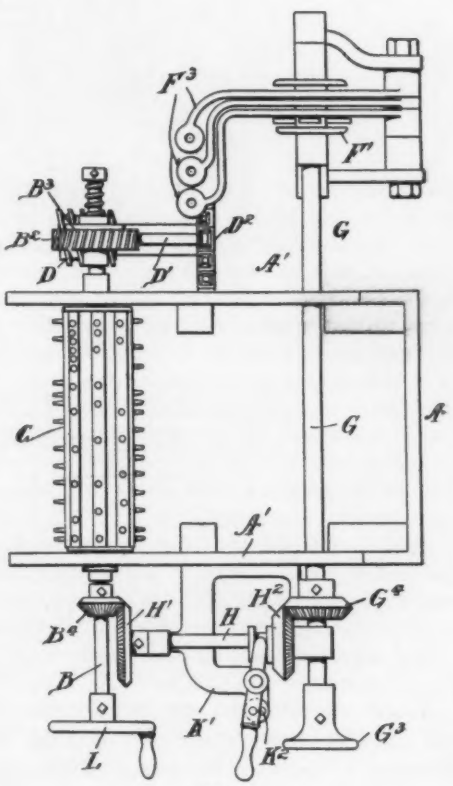


FIG. 2.

manual operation in the form of a crank-wheel, L, which is somewhat larger than the hand wheel, G^3.

In the normal operation of the loom, and when employing the shuttle-box pattern-

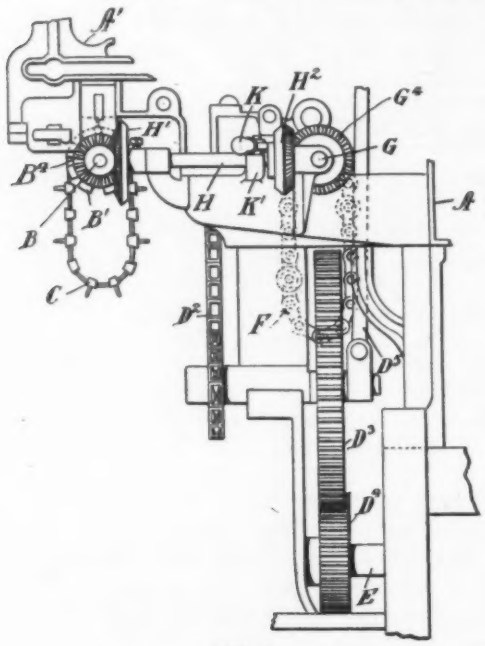


FIG. 3.

mechanism, the two shafts will be geared together as indicated in Fig. 2, so that the motion imparted, as above described, to the shaft, B, will be communicated by it to the shaft, G. If it is desired by the weaver to turn this mechanism backwardly with respect to the rest of the loom, as in the case of a mispick or a flaw in the weave or for any other cause, he may do so by turning the crank-wheel, L, which produces corresponding rotation of both chains. During this adjustment the clutch, B^3, will slip on the driving worm-gear, B^2. Or, if the weaver desires for special reasons to adjust one chain independently of the other, this may be done by opening the clutch by means of the interconnecting gearing. In cases where the shed-forming pattern-mechanism only is required for the work in hand, the shuttle-box mechanism may be disconnected and rendered inoperative by leaving the clutching lever, K, in its open position.

HONEY-COMB WEAVES.

BY TRINIDAD.

The honey-comb weave is commonly used in the manufacture of the lower grades of towels. It is also largely used for the ground weave of jacquard crochet bed spreads. This weave makes the fabric spongy or porous, a quality almost invaluable for toweling. These weaves are used with a very low sley and pick and with coarse warp and filling yarns. The jacquard crochet bed spread is a similar fabric except

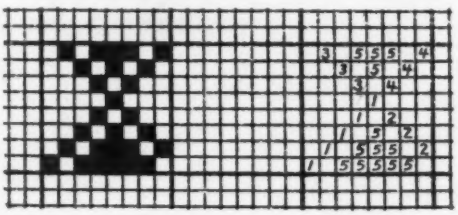


FIG. 1.

FIG. 2.

that a good grade of ply yarn is used instead of single yarn. The spongy or porous nature of the fabric is caused by the weave being divided into two or more sections, alternating with warp and filling flush. These sections are generally in the form of diamonds, although in some cases the forms vary. As these warps are composed largely of long warp and filling floats, it is advis-

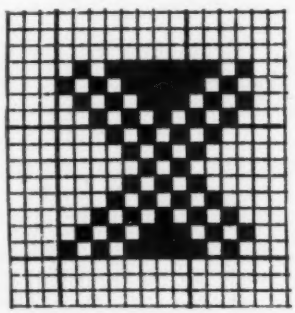


FIG. 3.

able to use one or more lines of plain stitching. These serve to make a firm fabric and are shown in the form of a diamond by squares marked 1, 2, 3 and 4 in Figs. 2 and 5. They may also be formed diagonally

across the weave as at 1 in Fig. 6. In Fig. 8 they surround the figure as shown by squares 1, 2, 3, 4 and 5.

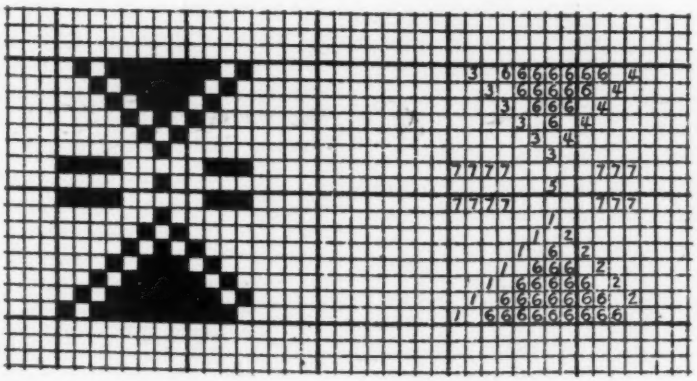


FIG. 4.

FIG. 5.

The construction of the ordinary weave needs very little explanation, but the irregular weaves are more difficult. We will begin with the simplest, an 8 end ordinary

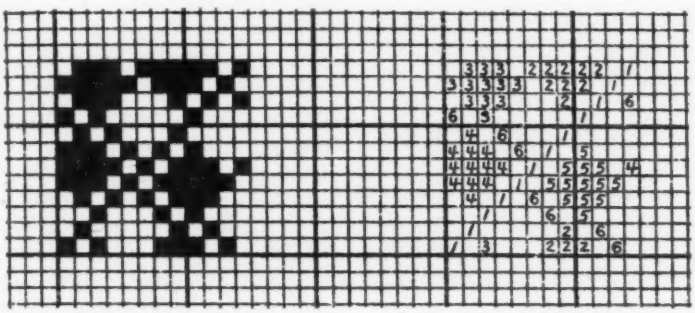


FIG. 6.

FIG. 7.

method of construction. The weave is divided into two sections as shown by 1, 2, 3 and 4. The diamond is formed from the twill, 1 up and 4 down, as shown by squares, 1. The warp section is filled as shown by squares, 5. This completes the weave.

The second type of honey-comb weave

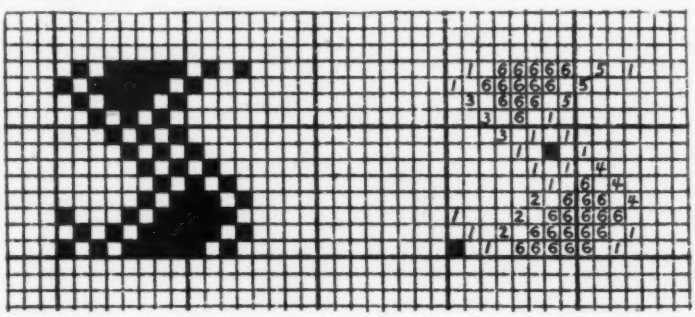


FIG. 8.

FIG. 9.

honey-comb weave with 1 line of plain. Fig. 1 shows the complete weave and Fig. 2 the has two lines of plain. Fig. 3 shows the complete weave on 12 ends and picks. The

construction is similar except that the base for the diamond is a twill, 1 up, 1 down, 1 up, 4 down.

The third type is shown at Fig. 4 and is generally made with 4 more picks than ends. Fig. 5 shows the method of construction. The weave is divided into two sections by the diamond as shown by squares, 1, 2, 3, 4 and 5. The diamond is formed from the twill 1 up 6 down, as shown by the squares, 1. The warp section is filled in as shown by squares, 6. The squares, 7, are added on the center picks of the filling section. This is for the purpose of breaking up the long floats at this point and to make a firmer fabric.

The fourth type of honey-comb weave is shown complete on 12 ends and picks at Fig. 7. It is composed of 4 warp and 4 filling sections. The method of construction is as follows: The twill line is first formed as shown by squares, 1. The center ends and pick of these diamonds have a float of 1 less than one-half the number of ends in the weave. The starting place for the first diamond is shown on the last pick by square, 2. The center pick of the next diamond is one pick lower, as shown by square, 3, on the 11th pick. The third diamond is started on one-half the number of picks in the weave as shown by squares, 4, on the 6th pick. The fourth diamond is started one pick lower as shown by squares, 5, on the 5th pick. Squares, 6, are added, completing the weave.

The fifth type of honey-comb weave is shown complete on 12 ends and picks at Fig. 9. It is composed of two rectangular sections. The method of construction is as follows: The weave is divided into two sections. The solid squares are marked on the first end and pick of each section as shown in Fig. 8. These two squares are encircled by squares, 1, making two small diamonds set at equal distances apart. These are joined by marks, 2, 3, 4 and 5, and the warp section is filled in as shown by marks, 6. This completes the weave.

SECTIONAL DRESSING FRAME.

BY PITMAN.

In preparing work for the sectional dressing frame, experience and good judgment must be depended on to devise the best method of laying out the work according to circumstances governing the case involved. Systems differ in many mills. In one the yarn is bought on spools, with 40, 48 or 60 ends on each spool as it happens. In other cases the yarn is spun and dressed in the same mills and can be spooled with any suitable number of ends on a spool, providing all the colors are in process of manufacture when they are needed. It is rarely the case that everything comes along just when wanted, but there are a few general rules that should be borne in mind. First: The number of sections is controlled by the number of patterns and ends in the warp. Second: The sections must contain the same number of patterns, and should be laid out in such a manner as to avoid the use of broken spools as much as possible. The number of ends per section varies approximately from 320 to 400. It is not advisable to run more than 500 ends as they cannot be handled easily. When broken spools have to be used, they should if possible be placed in the centre of the rack. Any yarn liable to run badly should be placed where it can be easily handled. The lighter colors should be placed at the bottom of the rack, in order to reflect the light upwards.

When the beamer is placed between the reel and reed, the dresser tender should start picking the pattern at the right hand side of the reed, reading the draft from left to right. If the beamer is set at the back of the reel, he starts picking the pattern at the right hand side of the reed and reads the draft from right to left.

The pattern illustrated is picked from right to left. In this way the eyes and hands work in the same direction. In this pattern we find five colors; 96 ends in each pattern, 5 patterns in each section, and 7 sections, making a warp of 3,360 ends.

PATTERN NO. 1.

6 X { 4 A, 3 B, 1 C

2 X { 1 E, 3 A, 3 B, 1 C

4 A, 3 B, 1 C

2 X { 1 D, 3 A, 3 B, 1 C

4 A, 3 B, 1 C

96

PATTERN	SECTION
44	220
36	180
12	60
2	10
2	10
96	480

480 times 7 = 3360 ends.

$$\frac{36 \times 32 \times 20 \times 30 \times 27 \times 72 \times 21\frac{3}{4}''}{30 \times 32 \times 28 \times 50 \times 40 \times 180 \times 2\frac{1}{2}''} = 1.208$$

$$\frac{36 \times 32 \times 20 \times 30 \times 13 \times 9''}{30 \times 32 \times 28 \times 14 \times 54 \times 12\frac{1}{2}''} = 1.59$$

In this case the yarn for A and B is purchased 40 ends on each spool. There will be 5 1/2 spools of A; 4 1/2 of B; 1 1/2 of C; and D and E will be spooled together half and half, 40 ends on a spool. The half spools should be tied over so as to run down even when the warp is finished.

In picking this pattern start at the right side of draft and pick 4 down and 4 up across the section; by so doing there is no need of following the draft, as it places A, D and E together in the 4 up, and B and C in the 4 down. Then separate the colors D and E from the top bunch as follows:

4 up,
3 up and 1 down 2 times,
4 up,
3 up and 1 down 2 times,
4 up 6 times,
the whole to be repeated 5 times.

The bottom lot of yarn should be separated 1 up and 3 down. After this simply separate each color into the number of spools needed. A should be picked 10 up and 1 down across the section to get the 1/2 spool, leaving 5 even spools to be picked. D and E are together as wanted. C will be separated 2 up and 1 down, B should be separated 1 up and 8 down to get the half spool, leaving 4 even spools to be picked. This done, the spools should be placed as follows, beginning at top of rack:

Top 5 40 ends spool A.
Top 1 20 ends spool A.
Top 1 20 ends spools D and E
Top 1 40 ends spool C.
Top 1 20 ends spool C.
Top 1 20 ends spool B.
Top 4 40 ends spool B.

The yarn is spooled 48 ends on a spool.

NOTES ON RESETTING COTTON COMBERS.

BY BOLSTER.

(Continued from February.)

When the latter method is used, it is necessary to adjust all the blocks, one for each head, and then take the feed roll and thread it through them in such a manner that the roll and blocks or frames may all be lifted in together.

When the blocks are adjusted in the machine, the feed roll must be placed in position before the nipper knife and cushion plate are set. In either case there are several points which must be carefully observed in the above adjustments.

Before the nipper knife is secured to the arms, it should be thoroughly cleaned and rest squarely on the surface provided for it; this also applies to the cushion plate, because particles of sand or dirt of any kind will tend to destroy the parallel relation which they should bear, and which is essential to the best results.

After securing the top nipper, nipper knife, in position, the cushion plate must be set parallel with its lower edge by the small screws provided for this purpose, and then secured into position by the binding screws

underneath the plate. In making this setting a strip of paper may be used as a gauge to test whether the surfaces are parallel, by placing them between the nipper and cushion plate, and adjusting them until the paper draws with the same tension at each side. Some comber men will use a small tin or steel gauge in place of paper, the gauge being made to rest on the lip of the cushion plate. Care should be taken not to have the over lapping edge of the top nipper rub against the front edge of the cushion plate; this can be avoided by passing a thin gauge between the cushion plate and inner surface of the top nipper. A 22 trowel gauge can be used for this purpose.

After the nippers have been set parallel with each other, we set the stop screws so that when they are in contact with the nipper stands, the upright arms will be near a vertical position. This can be made more accurately by placing an angle gauge upon the nipper knife, giving it an angle of about 25° to 27°. This setting to be made with the nipper knife resting on the cushion plate. Although the nippers are set to the needles at a later stage, we may temporarily set them to the fluted segment to line them up, a thick gauge, 16 or 17, being used for this purpose.

We now place a finger gauge between the steel delivery roll and front edge of the cushion plate, and adjust the plate to the roll by moving the nipper stands. It is advisable to commence at the central stand, as the two top screws resting against this stand are set. Then work towards the ends.

The distance between cushion plate and long steel roll vary about as follows for different staples: For cotton below 1 1/4 inch staple, use 1 3/16 inch gauge; for cotton from 1 1/4 to 1 1/2 inch staple, use 1 5/16 inch gauge; for cotton from 1 1/2 inches up, 1 7/16 gauge may be used.

We next set the remaining nipper stop screws, by placing a strip of paper between them, and adjusting on the one that has not been set until the paper is held with equal tension by both.

Place a 1/4 or 5/16 inch gauge between the stop screw and nipper stand; turn index gear to 14 1/2, and adjust the lower edge of nipper to the needles with a 19 gauge for medium cotton, or a 20 or 21 gauge for long staple cotton. Now place the nipper rods which connect the nipper frames to the nipper shaft, seeing that they work freely in the swivel, and do not bind either at top or bottom. Then turn the nipper cam until the roller is on the circular part of the cam, which is its position when the nippers are in their lowest position nearest to the cylinder. Adjust nipper rods until the step gauge is just eased, seeing that nipper is to gauge with needles while making this setting. The nipper springs may also be attached and adjusted by tightening for about 1/8 to 1/4 of an inch after they bite.

The brush bearings may now have the caps removed and cleaned, and it is advisable to loosen the stands a little which allows the brush to be placed in position somewhat easier. Now thread the brushes on the shaft and place shaft in the bearings. Set each head so that the bristles of the brush barely touch the face of the brass needle bars.

In making this setting, some comber men will depend entirely upon the eye, while others will set one end or head and then make a gauge to fit between the cylinder and brush shafts, using this to set the remainder.

When set, the brush must revolve freely in its bearings. To accomplish this one or more of the bearings may require moving a little; while this may cause the brush to appear a little further away. At this particular point or head the difference may be on account of the variation in the length of the bristles.

After the brush is set and connected so that everything is secured into position, we put on the doffer stands, leaving the doffer adjusting screws loose and out of action. Next lay the doffer on the stands and have the bearings all thoroughly cleaned. Now lift the doffer into the bearings, and set the ends and center of doffer up to the brush until the doffer just clears the bristles. Put on the remaining caps and see that the doffer turns freely in the bearings. To make sure that the doffer teeth and bristles are

clear, some comber men use a set of card gauges, 29/1000 of an inch.

Next mount the worm gear on end of doffer shaft. This gear usually serves the purpose of a collar for this end of the doffer, while a collar is placed at the opposite end to prevent the shaft from sliding one way or the other. See that all doffers are central with the nipper frames and cylinders. We now place the brackets for the cylinder and brush covers, setting these so that they are firm and clear of the parts at every point. Now thread the doffer comb arms onto the comb shaft and place it in the bearings. A gauge may be used to set the comb at the correct angle, after which the comb may be secured to the arms so that the teeth are clear of the doffer. Line up by sighting the edge of the comb over the comb shaft.

When one comb has been set, line up others by it. The tin waste packers may be placed between the comb arms and secured, a washer being placed on each side of the packer flange. The angle at which the comb arms are set in relation to the doffer will depend upon how the comb is stripping, but an angle of about 60 will be right for a start. Put the leather detaching roll into position. Oil the ends and weight up. See that the weight chains pass over the small guide pulleys under the beam of the machine.

Turn the cam shaft until the cam roll is in the hollow of the detaching cam. Have the leather roll resting on the fluted segment and bring the lifter blocks up to a 21 gauge from the leather roll bearings. This lines up the lifter blocks.

In setting the top comb the following points must be attended to:

(a) See that the segment is set properly under the top comb, and that the needles in top combs are in good condition. Two rows of needles in the top comb should have the fixed needles about 1/32 in. higher than needles in the adjustable bar.

(b) Loosen the eccentric which operates the top comb shaft; place a 16 gauge between roll and eccentric; then turn until the roll which rests on the eccentric is in its lowest position; have lifting dogs on comb shaft loose and clear.

(c) Secure combs to arms and set at 27° to 30°. The comb should clear the leather roll and also the nipper or cushion plate.

(d) Set the comb to the segment with a 19 gauge for cotton below 1 1/4 inches; 20 gauge for cotton from 1 1/4 to 1 1/2 inches; 21 gauge for cotton over 1 1/2 inch staple. This adjustment is made by set screws in top comb arm which rests on nipper frame and these screws should strike the stand at the same time.

(e) Set the lifting dogs so that they will be in line and raise all combs simultaneously. When down they should allow all combs to rest solid on the stands.

The top feed roll must be parallel with the bottom roll, free in its arms, and slightly forward of the bottom roll.

The lap guides should be set firm with the brush barely touching the surface of the bottom feed roll.

The brass roll must be central, parallel with the flutes of the delivery roll, and clear of the leather roll at all times. An 18 gauge is usually placed between the leather and brass roll while the setting is being made in order to assure a clearance.

Turn the dial to whatever time it is desired for the top comb to be down. Then place a slip of paper under one of the top stop screws, and turn the comb eccentric until the paper will just draw out.

It is customary to drop the comb into the lap about the time feeding commences.

Have the pin enter star gear at time required, 4 to 5 of index gear.

Time the nippers so that the stop screws leave the stands at 9 to 9 1/4.

Place a slip of paper between the lifter blocks and leather roll bushing. Then turn until the paper is just released, which should be when the index is at 6 1/2 to 7. This may be obtained by adjusting the lifter cam, or by the adjustments on the arms connecting cam and lifters.

Set index to 6 or 6 1/4 and adjust detaching cam to start delivery roll forward at this point.

The total amount of goods imported into England during November, 1908, was $242,554,304, a decrease of $35,174,979 as compared with November, 1907.

STANDARD GRADES OF COTTON.

(By Our Special Correspondent.)

The Cotton Grades Standardization Committee—which was called to Washington by the Secretary of Agriculture under the authority of Congress—met early in February, and spent three days carefully examining and considering the samples previously submitted, in order to agree upon standards for the nine proposed grades. The committee was composed of representative business men in the cotton trade, from different sections of the country, as follows: James A. Airey (of John M. Parker & Co.), New Orleans; J. S. Akers (Inman, Akers & Inman), Atlanta; Clifton P. Baker (Lawrence Mfg. Co.), Lowell; F. M. Crump, (F. M. Crump & Co.), Memphis; John Martin of Paris, Texas; Geo. W. Neville (Weld & Neville), New York City; L. W. Parker (Treas. Olympia Mills and others), Greenville, S. C.; Nathl. N. Thayer (Barry, Thayer & Co.), Boston, and Chas. A. Vedder (John D. Rogers & Co.), Galveston—with Mr. Thayer of Boston as chairman. The committee also had the assistance of three expert classifiers who aided materially in the preliminary work. They were: Jules Mazerat, chairman Classification Committee, New Orleans Cotton Exchange; W. P. Bartot, Classification Committee New York Cotton Exchange, and J. R. Thayer, Classer of A. L. Wolff & Co., Dallas, Texas. The foreign members of the committee were not present, as it was not possible for them to attend so early in the year, and it was important that the work of the committee should be finished before the expiration of the 60th Congress.

At the close of its labors a brief report, which was unanimously adopted, was submitted to the Secretary of Agriculture, the standards finally recommended being those that are in use in practical everyday business throughout the greater part of the cotton belt, and which are the standards that are accepted in commercial practice between this country and Europe. The report, addressed to the Secretary of Agriculture, is as follows:

Sir: Having been called upon by you to assist you in the establishment of a standard of middling cotton, and using the same as a basis establishing a standard of nine different grades, to be designated Middling Fair, Strict Good Middling, Good Middling, Strict Middling, Middling, Strict Low Middling, Low Middling, Strict Good Ordinary and Good Ordinary, in pursuance of the terms of the act of Congress upon the subject, which standards should be the official standards of cotton classifications, beg to advise that in pursuance of the instruction given us, we have made up types representative of each of the grades of cotton referred to above, which we have delivered to your department, and which we believe to be fair types of the different grades referred to.

It was strongly urged by the committee that steps be taken immediately to secure the concurrence of foreign exchanges in these standards, and owing to the fact that at the present time on the exchanges in America transactions are being made in contracts fully a year ahead, it was believed that in order to avoid confusion the standards certified should not go into use in the trade prior to September 1, 1910. It was pointed out that it would be unfortunate to have the standards used as a basis of sales in the middle of the cotton season, and that they could not be used the coming season without great injustice and confusion.

Suggestions were also made to the secretary regarding the practical questions involved in the preparation and distribution of the standards. It was the express wish of the committee that the government should at all times maintain the strictest supervision of the preparation of the standards, and that the standards prepared should be safeguarded in every way by such legislation as may be necessary to prevent their being tampered with.

Every facility was given the committee in the prosecution of its work, and at the close of the session the members personally complimented the department on its efforts in this direction. The examinations were made in a small detached building constructed with an immense skylight facing the north—giving ideal conditions for the detection of slight differences in the many samples of cotton considered. General satisfaction, it is said, has been expressed with the work of the committee. RENOUARD.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, any pertinent inquiry pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring ,not for publication, but as an evidence of good faith.

For reply to questions that are not of general interest to readers of textile journals, such as those relating to the composition of yarns, analysis of fabrics, etc., we will charge the enquirer with the cost of the investigation.

Flooring in Slasher Rooms.

Editor Textile World Record:

We have been troubled by rotting of the floor under our slashers and would like to know how this difficulty can best be remedied.

Slasher (1057).

Slashers are usually located on the upper floors of a mill, almost never on the ground floor. The usual custom is to provide drip pans under the machine which are most always of zinc.

The practice of covering the floor with sheets of copper soldered together is a very poor one. The floor will rot more quickly under those conditions than if there was no covering at all. Any moisture, as you know, tends to collect and to be held on the under side of the metal. Condensation of the steam not only from the slasher room, but from the room below would keep the floor beneath the copper constantly damp.

Concrete or asphalt might be a good thing if it was properly reinforced so it would not crack. Asphalt alone would not carry any weight if it is subjected to much heat. The objection to using asphalt or concrete in such cases is that the machines are likely to be moved in the event of rearrangement and the average manufacturer would not care to have a special kind of floor built under his slashers. Good solid spruce flooring with several layers of paper underneath to waterproof it and the planking treated with carbolineum would doubtless be of much better service than sheets of copper.

Some mills kyanize the lumber for such purposes, which has the same general effect. Spruce would seem to be the best material because it soaks up the impregnating compound better than other kinds of lumber. The use of wood blocks would have the same objections that apply to concrete and asphalt, namely that it would mean a different sort of flooring for certain parts of the mill.

Engineer.

Removing Rust from Reeds.

Editor Textile World Record:

We would like to get some preparation that will remove rust from fine reeds, say 90 to 100 dents per inch. Marshall (1042).

I have frequently had occasion to remove rust from various iron and steel articles and although I have never tried it on reeds, yet the good results obtained in other cases leads me to believe that it is worth while testing it in the cleaning of reeds. Pieces of ordinary zinc are attached to the article to be treated, which is then put in water to which a little sulphuric acid has been added. It should be left there until the rust has entirely disappeared, the time depending on how deeply it is rusted. If there is much rust a little more sulphuric acid should be added occasionally. The essential part of this process is that the zinc must be in good electrical contact with the steel or iron that is to be cleaned. A good way to manage this is to twist an iron wire tightly around the piece and connect this with the zinc. A battery zinc is the best to use as it has a binding post.

Besides the simplicity of this process it has the advantage of not having the iron or steel attacked in the least as long as the zinc is in good electrical contact with it. Delicate pieces of mechanism which have become badly rusted, can be cleaned by wrapping a galvanized wire around them instead of the zinc, in which case the acid should not be too strong. When the rust has all disappeared the article will appear a dark green or blackish color. They should then be thoroughly washed and oiled and it

is well to warm them slightly when dry so that the oil may sink into the surface. Since your question was received I have tried this process on a small piece of reed, which is sent to you under separate cover. It was badly rusted and you will notice that now it is very clean. James Chittick.

Care should be taken that the reeds do not get rusted. If the wire is deeply rusted replace the reed with a new one; if only slightly damaged, put on a little oil and take a tapered wire of hard wood and work upon the reed in the direction of the wire. Also take a piece of pumice stone and use it in the same way. Then finish by using fine emery cloth and a good stiff brush.

Hargraves.

Prices of Knit Underwear.

Editor Textile World Record:

In your January issue I note that the prices on underwear as quoted by you seem to be somewhat at variance with one another, and I would ask that you please make this plain to us.

You say that the Roff Underwear Co. have on the market a 12 pound tuck stitch garment selling at $3.12 1/2 and a 12 pound plain garment at $3.37 1/2. Please let us know if the finish is the same on these garments. Again you say that the Utica Knitting Co. are showing goods at $3.25 in the plain stitch weighing 11 pounds, in the coarser gauge at $3.37 1/2, and in the fine gauge at $3.50, the two latter being 12 pound goods. You also state that the same people have out a line of 8 1/2 pound goods in the ecru ribbed at $3.25. The Roff Underwear Co. are also showing a shirt of similar weight at $3.12 1/2. Please let us know if these goods are from carded or combed stock. We would also like to know why it is that there is so much difference in the goods of the same weight, simply because, as we take it, one is plain and the other tuck stitch. Abbey (1053).

Regarding our January article on men's ribbed goods will state, the Roff 12 pound tuck garment at $3.12 1/2 is cheaper trimmed than the one by one 12 pound garment at $3.37 1/2. We do not believe, however, that the difference in trimming accounts for all of the 25c. difference in price. The tuck garment is made of coarser yarn which lowers the price some, and as the one by one stitch is slower to produce, it also would make a difference in the price.

In regard to the Utica lines, the 11 and 12 pound fine gauge are made of the same grade of stock, the difference being in the weight, which accounts for the 25c. difference in the price. The garment referred to as weighing 12 lbs. in coarser gauge is made of coarser yarn, which lessens the cost 12 1/2c. The medium weight goods running about 8 1/2 lbs. are of course made of yarn of finer count and cost more per pound for the stock.

All of the above are made from carded yarn and the difference in cost between tuck and plain stitches of the same weight is a matter of difference in the count of the yarn and slowness or rapidity of production.

The demand for men's tuck ribbed goods is very limited, the trade having become thoroughly imbued with the idea that the one by one stitch is to be preferred. The demand for men's ribbed goods has increased of late and we are sure if "Abbey" would make a good 12 pound one by one rib garment, he would have no difficulty in getting $3.37 1/2 for it; or better still, if he would produce a garment of bleached and tinted yarn that would be very elastic, put mercerized tipping on the collarette and extension strap on the drawer band, cut the garments full and roomy, he could get $3.50 for them. The trade is looking for a good 50c. ribbed garment today, but the majority of those now on the market are so low in prices as to get to first class retailers at from $37 1/2c. to 39c. a garment.

Fillmore.

Tender Woolen Yarn.

Editor Textile World Record:

We are having trouble with some wool in our mill; it is brittle and does not make a strong thread. I am the dyer at the mill and have told the management what I think is the cause of the difficulty. Enclosed is a sample of the wool from which we are spinning 5 1/4 runs. I would like to have your opinion as to the cause of the trouble. Maxwell (1058).

It is our judgment that the stock is not fit for 5 1/4 run, being too coarse and short and we are not surprised that you are having trouble with it. Of course wool is sometimes made brittle and harsh in the dyeing process, but this does not seem to be the case with the sample enclosed. Of late years woolen mills have been deprived of the proper supply of raw material, and as a result, have been forced to use inferior stock, causing such troubles as "Maxwell" is in now.

Cost of Manufacturing Half Hose.

Editor Textile World Record:

I am about to start in the hosiery business and would like an estimate of the cost of manufacturing 200-needle half hose, using a lisle yarn.

Allen (1043).

It is a very difficult matter to estimate the exact cost of any article without being acquainted with the existing conditions, such as location, equipment, labor supply, capacity of mill, etc. The capacity of the mill has considerable bearing on the cost of manufacture. The larger the capacity the less the rate of mill expense will be per dozen. I will endeavor to present a system by which it is possible to figure the exact cost per dozen of any grade of hosiery regardless of the size of plant. In large mills it is usually desirable to know the cost of operating each department and for this purpose we will classify each department separately, taking up each operation, and every item bearing on the cost of the article. In the knitting department we find the following items of expense:

(1) Kind of yarn, 2/40s.
Price of yarn per pound.
Weight of yarn per dozen.
Total cost of yarn.
Knitting ribbed tops.
Cutting ribbed tops.
Topping per dozen.
Transferring per dozen.
Waste.
Handling and superintendent.

(2) Looping Department.
Turning per dozen.
Looping per dozen.
Mending per dozen.
Hemming per dozen.

(3) Dyeing Department.
Turning per dozen.
Singeing per dozen.
Dyestuffs per pound or dozen.
Drying.
Superintendent and handling, per dozen.

(4) Finishing Department.
Turning per dozen.
Boarding per dozen.
Pressing per dozen.
Brushing per dozen.
Mating per dozen.
Stamping per dozen.
Ticketing per dozen.
Folding per dozen.
Boxing per dozen.
Handling and Superintendent.

In addition to these we must add the following items of general expense·

Per dozen.
Fuel.
Power.
Oil.
Office.
Taxes.
Repairs.
Insurance.
Lights.
Supplies.
Express.
Advertising.
Selling.
Miscellaneous.

It would be impossible in an article of this kind to give the cost of each of the above items. Local conditions will have much to do with some of them. I will give prices of different operations in the various departments and in this way give a close estimate of the cost of manufacture of the goods.

I find a 2/36 to 2/40s lisle would give better results on this gauge work, and the goods will finish 14 ounces per dozen. The cost of the yarn will average about 35 cents per pound. Using this as a basis we find the cost as follows:

	Per dozen.
Cost of yarn	$ .31
Knitting ribbed tops	.005
Cutting ribbed tops	.005
Topping ribbed tops	.07
Transferring ribbed tops	.045
Waste	.04
Looping	.06
Turning	.005
Mending	.03
Turning second time	.005
Dyeing	.11
Turning two times	.01
Boarding	.02
Pressing	.01
Mating	.02
Stamping	.005
Ticketing	.005
Folding	.01
Box and Boxing	.05
Total	.815

The above practically includes all the actual expense of manufacture, but to this must be added the following miscellaneous items:

Per dozen.
Seconds.
Fuel.
Power.
Oil.
Office.
Taxes.
Repairs.
Insurance.
Lights.
Supplies.

Express.
Freight.
Advertising.
Selling.
Miscellaneous labor about mill.
Superintendent.

This will bring the actual cost to about $1.31 per dozen.

In order to find the cost on each of the above miscellaneous items it would be necessary to keep a separate account of the amount paid out and the rate of each based on the production for one year.

The item classed as "superintendent and handling" includes all of the regular day workers' wages, including superintendent and overseers. In a small mill this item is often reduced to a very low figure by having one overseer look after several departments.

Merrill.

Jig Dyeing.

Editor Textile World Record:

We enclose a sample of black twill goods. Will you kindly advise us if we could obtain a similar black, or almost as good, by jig dyeing, using aniline black. Also advise us as to what kind of machine is generally used in dye houses to wash piece goods after dyeing in a jig and what is the cost of one? Poplar (1055).

Aniline blacks are never dyed on a jig. They are padded, dried and steamed to oxidize. Even sulphur blacks cannot be jig dyed, but this method can be used to advantage on developed or direct blacks. Goods dyed on the jig are washed on the same jig when shelling up and again on the mangle, preferably by a spray. Manhattan.

This shade can be matched very closely by jig dyeing using aniline black in eight ends and after treated with boiling bluestone and chrome three ends hot and shell up through one water. Use three pounds of any standard black to 100 pounds of cloth. It can also be matched with sulphur black in 5 ends, boiling off jigs. Neither of these will be as fast to alkali as the sample you sent me, but will be fairly fast to acids. In washing piece goods on jigs, they are generally washed on a water mangle, that is, a three bowl machine, 2 large wooden rollers and one brass one with a perforated spray pipe on the back to wash the goods after they come through the first nip and before they go into the second nip. This machine washed them perfectly clean and if there is a good set kept on the mangle they will be well squeezed. This machine should not cost over $500 and it is very essential in a piece dye house. Saxon.

An aniline black can be obtained on a jigger similar to the one sent to me by using an aniline black solution. The quality and fastness of the color does not depend so much on the kind of machine used as it does upon the formula used in the making up of the bath, the heat at which the goods are dried and aged, and also upon the after chroming. Dyeing black in jiggers is now a thing of the past, especially in dye houses where a large amount of goods are run at a low cost. Aniline black is dyed in one continuous run on a set of machinery in which the dyeing padder, the copper drying cans and the ager are connected, reducing time of dyeing and the cost of labor. It must be apparent where a low labor cost and saving of time are to be considered that a dyer using jiggers and aging and drying separately would be handicapped very much, so much so that I believe it would pay where only a small amount of aniline black is needed, to send the work to one of those dyers who make a specialty of dyeing aniline blacks, and who will guarantee the work.

While a similar black can be dyed in the good old fashioned way on jiggers, yet I believe it would be much better to install a set of machinery and start right, if the best results are desired.

Regarding machine for washing after jig dyeing. There are several kinds used, the large print works use the open soaper with beater rollers, which have several compartments and several sets of rubber squeeze rolls. Then again the goods are sometimes washed on the jiggers, especially where the shades are light and few in number. If "Poplar" is dyeing enough aniline black to require a washer, he should install a complete dyeing plant for this purpose.

Dunloe.

KNITTING DEPARTMENT.

For Knitting Mill Machinery, Equipment and Supplies, see pages 236 to 253. Also Buyers' Index.

THE KNIT GOODS SITUATION.

There has been an improvement in the primary knit underwear market during the past month. A number of buyers who came on to attend the meeting of the Knit Goods Buyers' Association remained in New York and placed orders for a proportion of their season's needs. Since that time orders have been coming into the manufacturers' and agents' hands in fairly good volume. It must not be understood by this that buyers are taking hold as they did two or three years ago. Their orders are very much smaller, but there is a sufficient number of them to encourage manufacturers in the belief that there will not be much difficulty in selling up this year's production. Certain buyers had booked small orders early in the season with salesmen who were on the road or on their first visit to the market early in January. When they came on last month and found that manufacturers were holding the situation so well in hand, they concluded it would avail them nothing to delay longer, and so have placed duplicate orders on most lines.

The price situation on men's fleeced goods is firm and it is believed that $3.37 1/2 for standard goods will be the low notch. There are many interested parties who profess to believe that this price will be advanced to $3.50 before long.

It is noticed that there is a willingness on the part of buyers to place orders on almost anything that is shown in the way of fleeced goods, different from the regular silver grey, Yaeger and blue that have been so popular during the past two seasons. There has been some very sightly goods made of random yarns, as well as some mock ribbed fleeces and plain dyed colors on which quite a satisfactory business has been done at from $3.50 to $3.75 per dozen.

As for sub-standard fleeces, they may be had from a number of sources at $3.12 1/2 to $3.25 and it is said orders have been placed quite freely at these prices.

The use of men's cotton ribbed goods has undoubtedly increased during the past year and buyers have taken hold of this line for fall so well that some of the larger factors claim to have enough business booked to keep them comfortable for several months ahead.

The Fuld & Hatch Knitting Company are showing a men's ecru ribbed garment at $5.00 per dozen that buyers are placing liberal orders on; the drawer has extension strap band and the shirts have silk fronts and also what is called a ventilating gusset under the arm. These gussets are made of porous knit cloth and constitute the talking feature of the line.

The Oneita Knitting Company have also brought out a new ribbed line at $7.00 which is attracting considerable attention. It is made of combed Egyptian yarn by a new process of knitting which makes a ribbed cloth that has the appearance of a flat fabric. It is elastic but not as much so as the Derby ribbed goods to which we have been accustomed. On account of their being less elastic, they are made to measure about 36 inch for 40 inch shirt, this being about four inches wider than the ordinary Derby ribbed garment.

Manufacturers of ladies' low priced peeler ribbed goods are complaining on account of not getting the usual volume of business. Prices continue the same, namely, $1.75 for 6-pound; $1.90 for 7-pound in ordinary sizes, and $2.00 for 7-pound extra sizes. This is probably as low as this class of goods can be made and show any margin to the manufacturer, but trade in general show a tendency to take many more bleached goods than formerly. As tuck stitches are not very satisfactory, it is having the effect of throwing the business over to the fine stitch

goods. Manufacturers making plain stitches at $3.00 to $3.50 claim to have orders enough to take their production up to August and September.

Jobbers are complaining about the slow delivery of spring goods, but in many cases where the matter is looked into carefully, it is found to be because the orders were placed so very late. The fact of the matter is that buyers bought spring goods very sparingly last July and August and have been duplicating freely only since about January first; of course, manufacturers are not in a position to make immediate delivery.

Some slight advances are asked on ladies' lower priced straight ribbed goods, but we do not learn of any advances being paid on any other lines.

J. W. North & Son are putting on the market a new garment called the Nu-Mode. It is a combination suit that combines the knit vest with muslin drawer, the knit vest part extending just below the corset. It is made either high neck and long sleeve, or low neck, no sleeve,—the low neck garment being cut with narrow French back and full bust. There are also garter holes through the sides of the drawer part, the use of which obviates crumpling the embroidery under the garter when attached to the corset.

HOSIERY.

Many jobbers are out with their new fall line, but it is too early yet to form a correct opinion as to whether retailers are ready to place their orders or not. Judging from the business that has been done, it looks as though wools and fleeces will not be any stronger than they were this last season, and generally speaking, the medium and light weight cotton and lisles bid fair to make further inroads into the business that was formerly done on heavier weights.

Even on fashioned cotton, weighing 2 lb. 8 to 2 lb. 12, there will not be near the business done that was done three or four years ago. Jobbers are placing their orders very sparsely on this class of goods. The popular weight for a 25 cent retailer in fashioned cotton for fall and winter use now seems to be about 1 lb. 12.

In summer goods, colors continue to be good sellers and new shades are being constantly added. Some of the more recent shades are: Rejane, apricot, mesange, gobelin, Armenonville, cedar, peacock and mulberry. At the present time, old rose is very popular and is difficult to procure. Every indication points to a good tan season, though it is generally conceded that the bulk of the business done on colored goods will mean so much less business on tans, and that blacks will hold their own.

A very effective style in tan and other colors is shown by having the boot of the stocking a darker shade of the same color than the top of the stocking. These are shown in plain and fancy drop stitches, as well as self embroidered and plain goods. In the self embroideries this color change is made so that part of the embroidered design will be in both boot and leg.

Laces have been selling very freely in both black and tan, but in fashioned goods principally. A very fair quality of imported laces may be had to job at $2.25.

The deliveries made by manufacturers on spring orders cannot be said to be good and in many cases, are quite the reverse.

Chemnitz reports state that the business there is at a standstill, as far as placing orders is concerned, and that only one or two of the big importing houses from this country have placed orders that come anywhere near being normal in volume. In spite of this, deliveries made from there, are also from six to eight weeks late in many instances, due to no fault of the manufacturers, but to that of the dyers who are taking an exceptionably long time to return goods to the manufacturers. This is occasioned in all probability by the enormous variety of shades that they are obliged to execute.

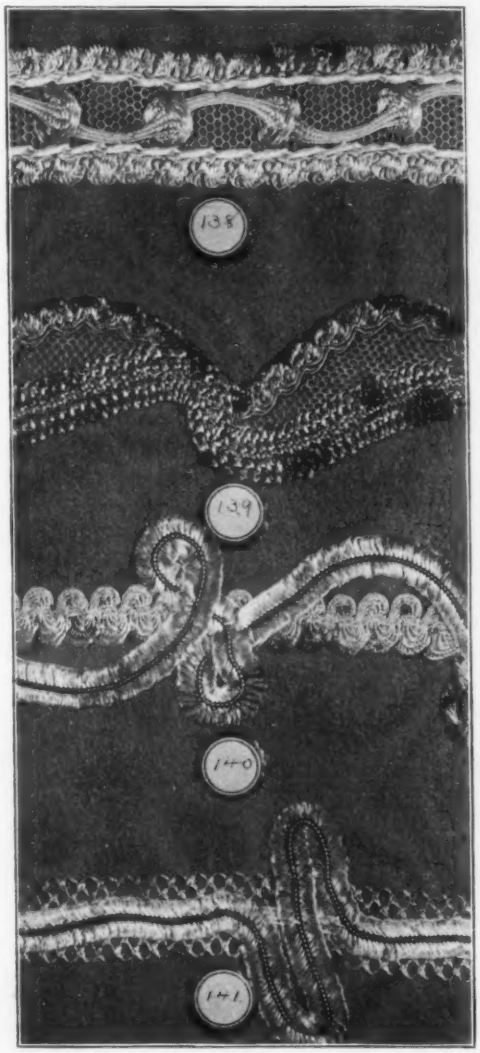
England exported 22,506,700 pounds of cotton yarn in November, 1907, against 11,486,900 pounds in November, 1908. In November, 1908, 378,952,400 yards of cotton piece goods were exported as compared with 516,375,200 yards in November, 1907.

THE MANUFACTURE OF BRAID IN THE UNITED STATES.

BY FERDINAND THUN.

(Continued from February.)

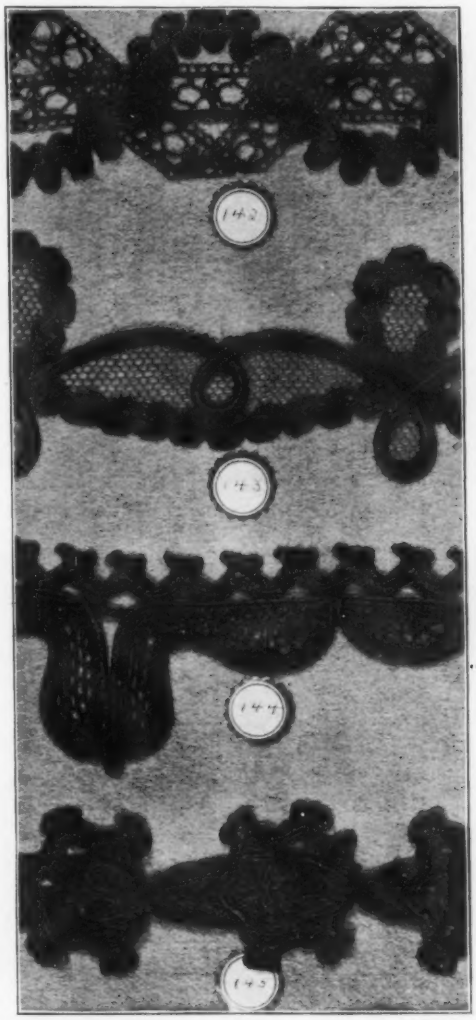
Fig. 138 shows a trimming composed of two featheredge braids sewed to the edge of a strip of netting. The centre figure consists



FIGS. 138, 139, 140 AND 141.

of a tightly braided silk tubular braid with loosely braided portions interposed. These loosely braided portions are compressed lengthwise and form the circular or tulip effect shown in this trimming.

Fig. 139 shows a trimming composed of a three line rickrack braid with featheredge on one side sewed on a piece of netting cut out



FIGS. 142, 143, 144 AND 145.

in irregular shape, the featheredge of the braid projecting beyond the edge of the netting. The opposite edge of the trimming shows a lace braid made on an eight line, four thread lace machine and illustrates how this braid is adapted to be folded edgewise to form irregular lines.

Fig. 140 shows a waved braid of white artificial silk with a black and white featheredge braid sewed on forming a composite design.

Fig. 141 has as a background a lace braid made on an eight line, two thread lace machine with a black and white featheredge braid sewed on as shown.

Fig. 142 shows a very pretty trimming composed of two narrow two thread lace braids and black rick-rack braid, all three sewed together to form a design.

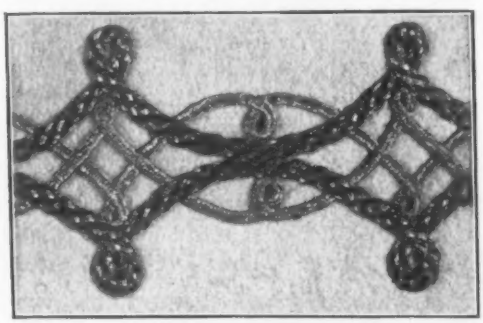


FIG. 147.

Figs. 143, 144 and 145 show three passamenterie-like trimmings. Fig. 143 is composed of a rick-rack braid with featheredge on one side, a president braid made from artificial silk with a heavy filling and netting to form the foundation for the trimming. Figs. 144 and 145 show how radically different effects can be produced by a combination of two braids. The lace braid and zigzag loop braid in both patterns are the same.

Fig. 146 shows a pretty effect produced by the use of netting, black and white rick-rack braid and a black and white stripe braid laid up to form a spiral figure.

Fig. 147 shows a tinsel trimming made from black and gold tubular braids and gold soutaches.

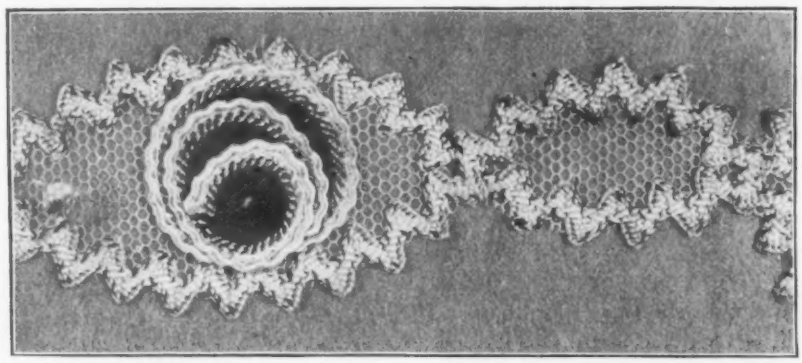


FIG. 146.

Fig. 148 shows a pretty effect obtained by two loop edge tubulars in black and white artificial silk, forming circular figures.

The foregoing illustrations show only a very limited number of designs, but they will give a good idea of the endless combinations possible in using braids as trimmings. The entire line of passamenterie and embroidery ornaments.

In the foregoing articles I have only attempted to give a few illustrations of each class, and hope that I have succeeded in impressing the reader with the possibilities of the braid industry. Wherever ornamentation of a garment or other article of apparel is desired and in place, braids in some form or other will usually be found to be the most appropriate.

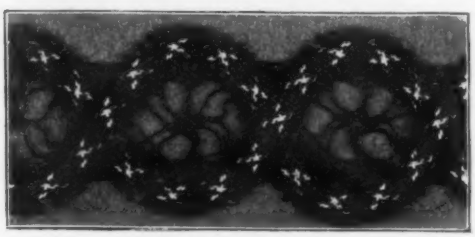


FIG. 148.

WINDING AND DOUBLING OF BRAIDER BOBBINS.

Inasmuch as properly wound spools are most essential in getting good results on braiding machines, I will briefly call attention to the winding and doubling machines illustrated by Figs. 149 and 150, and by the

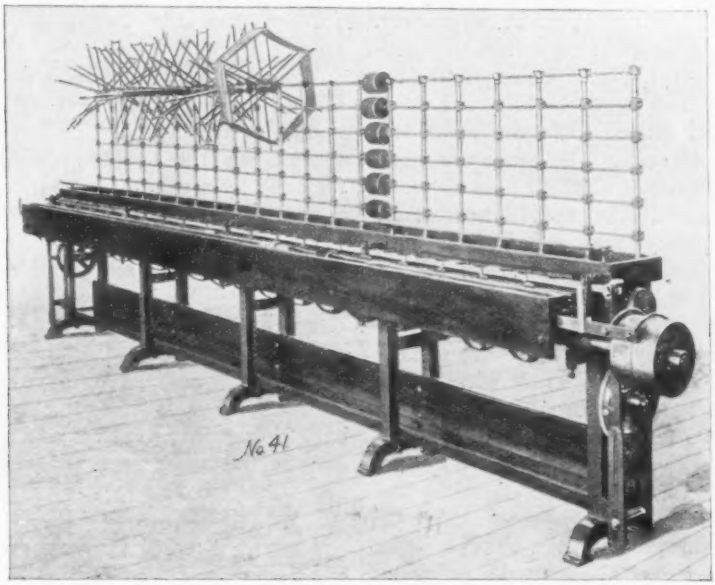


FIG. 149.

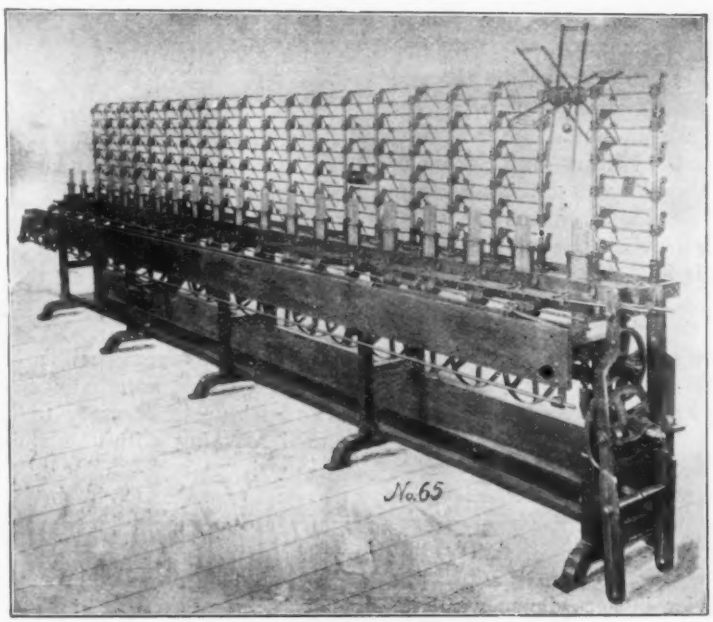


FIG 150.

Textile Machine Works. The winder shown at Fig. 149 is made with iron frames con-

nected by means of angle iron, the whole frame work being stiff and compact. The shaft runs in boxes which are vertically adjustable, thus securing perfect alignment. The pulleys are of iron, 10 inches in diameter and 1 1/4-inch face. The spindles revolve on these iron pulleys. They are made from tool steel turned from the solid and tempered at both ends. The heads are made of compressed leather washers held between iron flanges. The leather spindle heads running on iron pulleys give a perfect friction contact. The diameter of head and weight of spindle can be varied according to the size of the yarn to be spooled. The traverse guide is operated by a cam on one end of the machine. This cam is made with 1 1/4, 1 1/2, 2 and 2 1/2 inch throw, is accurately milled on a special machine and is absolutely true, the result of which is a perfectly wound spool. The length of the traverse can be adjusted by means of the lever which conveys the motion to the guide bar.

If desired, two sizes of spools can be made on the winder at the same time and on any of the spindles. In order to allow this, a second traverse bar is placed on the machine and a second lever on the cam. By changing the position of the fulcrum, the traverse of the two bars can be made to vary. The thread guides are mounted on a clamp which can be fastened either on the front or rear bar, while the distance of the eyes from the centre of the spindle remains the same. A stop motion is provided to stop the spindle when the spool is full. The swifts are made in the well known manner shown in the illustration. A trough for laying down the spindles and spools forms the top of the front board, and a shelf for empty spools serves as a base for the iron frames. This machine can be built with any desired number of spindles, the usual size being twenty spindles.

The doubler illustrated in Fig. 150 is practically the same machine as the winder illustrated in the preceding figure. The spindles are of the same general construction, but are usually heavier in accordance with the work they have to do. These machines are arranged for doubling up to eight ends of silk or any other material. An automatic stop motion is provided which stops the spindle as soon as an end breaks or a spool runs out. This stop motion works very rapidly, and the broken end does not get any further than the thread guide before the spindle stops.

A brake with adjustable weights is provided to secure tension on the winding spools in the frame. To get more or less tension on the spools a sliding weight is fastened by means of a knurled set screw at a greater or less distance from the flat end of the lever pressing against the winding spool. The cam and double lever riding thereon are plainly shown on this cut. It is clear that two different lengths of traverse can be made on this machine also. The two levers are connected by a yoke arm, exerting a spring pressure against both levers and balancing them in such a way that when one goes in the other goes out, riding on opposite sides of the cam.

A FULL AUTOMATIC KNITTING MACHINE.

A machine of the full automatic type has recently been patented in this country, and is described by the inventor as follows:

The machine enables the complete article, such as a stocking, to be knit from one end to the other entirely automatically, so that all that is required is to keep the machine supplied with the proper yarns, to separate the stockings which come from the machine in a continuous web, and then to perform such simple operations as the stitching or looping together of the opening left at the toe end.

The present invention it is believed combines in a single automatic machine all the various features necessary to make a commercial stocking with the ribbed leg with reinforced toe and heel portions of proper and proportionate weight throughout and of sightly appearance when finished and when worn.

The stocking is, save for the necessary closing seam of the toe, knit in one seamless web, with the toe, foot and heel portions formed of plain knitting, and the leg portion of ribbed knitting. Since in forming the ribbed leg more stitches are made in a

course than are made in forming the plain circular portion of the foot, it will be seen that, unless provisions were made to compensate for the increased number of stitches thus formed, the ribbed leg would be too large and unsightly. The leg portion of the stocking, which is also patented, is accordingly formed of a thread enough finer than that used in the foot portion to compensate for the increased number of stitches. The object of the invention was a seamless stocking in which the foot portion was knit in plain stitch, the leg portion in rib stitch, and with the relative weights of the yarn in the ribbed leg and the plain foot in inverse ratio or proportion to the number of stitches in the ribbed leg and plain foot portions.

The machine comprises among others the following features which enable it to respond to the requirements for the production of not only such stockings as described, but also stockings and other work of varied character and construction; two sets of knitting needles, the one for the production of plain circular work and reciprocating work, the two combined for the production of ribbed work, and means for controlling the separate and joint operation of the sets of needles, all from pattern mechanism, so that either plain circular, reciprocating, narrowing and widening, or ribbed knitting may be performed upon the machine at and during such periods as may be predetermined. Web holders or sinkers for the set of needles for performing the plain and reciprocating work over which the thread is at times measured off, and which serve to hold down the knitted web especially during plain knitting.

Take-up mechanism supported by the knitted web, additional weights for the take-up mechanism to increase its taking up effect, and means for automatically applying either the take-up mechanism, or the weights or the take-up mechanism and the weights at and during such periods as may be predetermined. Auxiliary take-up mechanism or grab mechanism for meeting the requirements occasioned in the taking up of the knitted web due to the occurrence of pouches, such as formed in knitting the heel and toe, and means for automatically putting said auxiliary take-up mechanism into operation at and during such periods as may be predetermined. Thread supplying mechanism with provisions for automatically changing, adding or omitting threads of desired weight or quality at intervals, whereby desired portions of the stocking may be reinforced or formed of thread of different character or quality. Mechanism for automatically controlling the length of the stitch and hence the elasticity or tension of the knitted web, whereby the shape of the stocking may be controlled. Mechanism for automatically changing at predetermined times the speed of the knitting machine to accommodate it to the character of knitting.

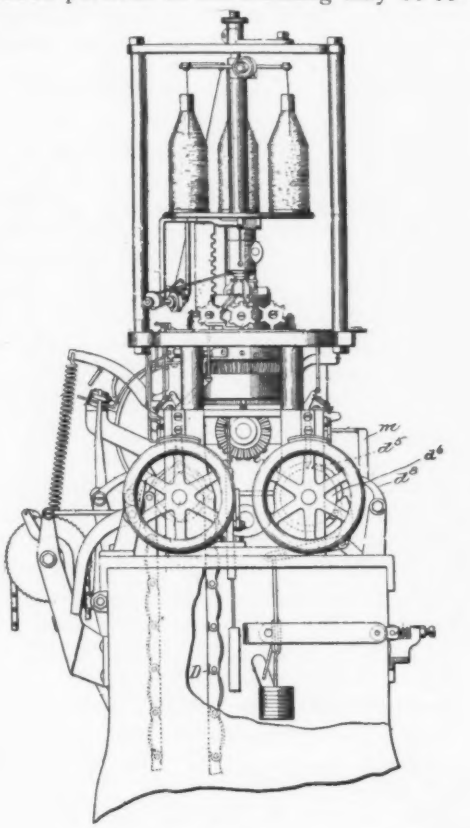


FIG. 1.

In the machine the work is preferably commenced at the toe pouch. The active set of needles in narrowing and widening are supplied with a coarse thread, the machine

running at a comparatively slow speed as required in reciprocating work. Upon the completion of the toe pouch the thread is changed to a finer quality, and the plain foot portion knit in complete circular courses, the speed of the machine being increased at the same time to a higher speed. When the heel pouch is reached the speed of the machine is decreased, a change of yarn effected, and a heel pouch formed in the usual way by narrowing and widening.

On completion of the heel pouch the plain circular knitting is resumed at high speed and a change of thread made to constitute an ankle portion, if a plain ankle portion is desired. If the ribbed leg is to be formed directly on completion of the heel pouch then the dial needles are thrown into action, a change to a finer thread effected, the speed of the machine increased, and the size of the stitch adjusted to produce a ribbed leg of the requisite elasticity and weight. The entire operation throughout is automatic and continuous, and upon the completion of the stocking the change is automatically effected to plain circular web to form a short connecting web between the end of one stocking and the toe of the succeeding stocking, so that the stockings are knit in one continuous web. The regulation, employment, timing and adjustment of all the mechanisms is such as to make the machine capable of performing a very great variety of work.

Fig. 1 shows the machine, the lower part of the side frame and part of the pattern surface being omitted.

The operation of the machine is as follows: Assuming the machine to have just completed a stocking by knitting the ribbed leg and several plain circular courses dividing the leg of one stocking from the toe of the next succeeding stocking, the main pattern chain is rendered active through the constantly moving controller chain, and through it the radius bar is actuated to move the shifting bar, e^8, into the path of its operating means to effect the change from circular to reciprocating knitting. Such movement of the shifting lever, e^8, by the radius bar simultaneously withdraws the pawl lifter, d^{11}, from under the pawl, d^9, thereby causing the pattern cylinder, d^6, to be operated to bring a bar, d^5, beneath the jacks, the needles of which are to remain idle during reciprocating work. Immediately thereafter, the movement of the clutch shifter, e^{20}, to engage the clutch with the reciprocating gear, B^{26}, places the arm, m, beneath the pawl, d^8, to cause a dwell of the cylinder, d^6, during reciprocating work. The thread guides are operated to effect a change of thread, the length of stitch may be changed, if desired, and the speed of the cam cylinder reduced for reciprocating, the dial cam plate having been also disengaged from its locking means by the riser on the pattern chain to cause the dial cam plate to change its position with respect to the dial needle plate and cam cylinder, so that the dial needles although continued to be reciprocated, no longer take thread.

The main pattern chain continues to move by virtue of its pawl and ratchet during narrowing and widening, the lags on the chain successively operating on the needle jacks of the set of needles used in forming the heel and toe pouches, to retire one or more needles from the end of the series of needles, and then in like manner successively to return them to active position. As the toe pouch nears completion, the medium weight thread is introduced and subsequently the heavy thread used for the toe is withdrawn under direction of the main pattern chain, the radius bar being moved by the main pattern chain to move the shifting lever to change from reciprocating to rotary knitting. Such movement of the radius bar frees the pawl for operating the pattern cylinder, d^6, which is then rotated a sufficient distance to free the needle jacks from control of the bar, d^5, and to free the take-up and weight to be sustained by the fabric, the grab being operated on movement of the cylinder to engage the toe pouch to take up slack, after which the pawl lifter, d^{11}, by a riser on the cylinder, d^6, lifts the pawl from the ratchet, d^7, and the cylinder remains at rest with all the needles in action.

The speed of the cam cylinder is now increased by shifting the speed lever, i^{10}, under the call of a riser on the moving main pattern chain and circular knitting is pursued with the medium weight thread and at an

increased speed, the main pattern chain being now freed from the actuation of its pawl by the pawl controller, D^{12}, under the call of a riser on the main pattern chain, the said chain remains at rest, and circular knitting is continued until the heel pouch is reached at which time the controller chain frees the pawl, D^{6}, from the controller, D^{12}, and the operation described for the toe is carried on to produce the heel pouch.

If a plain ankle portion is to be knit, after the production of the heel pouch, plain knitting, with a change of thread, and change of speed is resumed as described for the foot between the toe and heel, after which rib knitting is commenced in circular courses by a still further change of thread to that of fine gage, and a change of stitch, the high speed being continued throughout the leg, and the length of stitch being varied from the ankle upward to accord with the size and elasticity of the fabric necessary to fit the form.

Just prior to commencing rib knitting the main pattern chain is moved to bring into position a riser to effect a change of thread to that of fine gage, to change the length of stitch, as has been described, and to unlock the dial cam plate so that it may assume position with respect to the dial plate and cam cylinder to cause the dial needles to take thread and coact with the cylinder needles in the production of ribbed work, after which the main pattern chain remains at rest until called into action again by the continuously moving controller chain.

Tartar Emetic.

Editor Textile World Record:

Will you let us know what the difference is in the use of tartar emetic and soluble antimony on silk twist? Is the use of tartar emetic a saving over soluble antimony of any per cent.?

Soluble (1054).

Tartar emetic contains a much larger percentage of antimony oxide than soluble antimony, but soluble antimony is quicker and more rapid in action. Tartar emetic should contain 43 per cent. of antimony oxide and soluble antimony should contain 25 per cent. of antimony oxide. The practical difference arises from the tendency of the soluble antimony bath to become acid more rapidly than the tartar emetic bath. If not carefully corrected this will dissolve or strip back the tannin lake which should be fixed on the fiber. Therefore, soluble antimony requires greater skill and watchfulness than tartar emetic. In the interest of dependable results tar emetic is often preferred.

Tartar.

STANDARD SIZES OF UNDERWEAR.

Some time ago the National Wholesale Dry Goods Association adopted a scale of sizes for underwear, and has recently decided that to issue labels to be affixed to boxes containing hosiery made in accordance with the association standard. The label bears the inscription, "N. W. D. G. A. Standard Scale" and this notice:

These garments are made according to the scale of measurements or system of marking or sizing adopted by the National Wholesale Dry Goods Association, measurements positively guaranteed. New method of marking or sizing: Infants' wrappers: ages—years—A/o—B/1—C/1½—D/1—E/2½. Children's vests, pants and union suits, ages—years, 2, 4, 6, 8, 10, 12, 14, 16. Boys' shirts, drawers and union suits, ages—years, 6, 8, 10, 12, 14, 16. Ladies' vests and union suits, regular sizes, bust 34, 36, 38. Ladies' vests and union suits extra sizes, bust 42 to 44. Pants to match marked same sizes as vests. Men's shirts and union suits, chest 34 to 50. Men's drawers, waist 30 to 50.

KNITTING MILL NEWS.

New Mills.

*California, Los Angeles. Good progress is being made on the equipping of the new Pioneer Hosiery Mills, and manufacturing will probably begin March 1, as planned by the officers. A full report of this project was given in January.

*Michigan, Grand Rapids. Manufacturing has been started by the new Clarke Knitting Co. They are running 20 machines on union suits and knit goods. Other particulars of this company have been given.

*North Carolina, Asheboro. Johnson & Davis of this place have been awarded contract for the erection of a building for the Acme Hosiery Mill. The structure will be 60 by 100 feet, and will be equipped with 100 knitting machines. The organization of this company was reported previously. O. R. Cox is secretary and treasurer.

Pennsylvania, Catasauqua. James E. Missiner has installed machinery for knitting hosiery in the building at Second and Arch Sts., North Catasauqua.

*Wisconsin, Milwaukee. Twelve knitting machines and three sewing machines are being operated by A. Hanschke, 491 Madison St., under the style of the Cream City Web Co. The plant is operated by electric power.

Enlargements and Improvements.

Georgia, Columbus. In April new equipment will be added to the plant of the Perkins Hosiery Mills. They are not ready yet to announce the nature of improvements. C. L. Perkins is president.

*Michigan, Grand Rapids. As reported previously, the stockholders of the Globe Knitting Works of Grand Rapids, and the Thornapple Knitting Co. of Middleboro, have decided to consolidate the two companies. The capital stock of the new corporation, which will be known as the Globe Knitting Works, is $400,000, providing a stock dividend to the amount of 50 per cent. and an issue of $78,000 preferred stock earning 7 per cent., and $47,000 common stock, which will be held in the treasury. E. A. Clements is president and H. M. Liesveld is secretary and treasurer. Carl Clements is superintendent of the Grand Rapids plant, and D. G. McLaren is superintendent of the Middleboro plant. It is understood the plants will be enlarged.

*Michigan, Grand Rapids. There will be practically no change in equipment of the Grand Rapids Underwear Co. when they remove into new quarters on South Division St., March 1. In the near future, however, it is planned to increase the equipment. 12 circular, 25 Lamb knitting machines, and 20 sewing machines are operated.

*Michigan, Montague. The Empire Knitting Mills are contemplating an enlargement on the plant, and are interested in new finishing department machinery. Joseph Kaufman is buyer and C. F. Schuessler is the superintendent.

New Hampshire, Manchester. The engine room of the Elliott Mfg. Co. will be enlarged by an addition, 23 by 30 feet.

New Jersey, Camden. The Merrimac Mfg. Co., 95-97 Federal St., is very busy on extra fine ladies' ribbed underwear, and the directors are contemplating the erection of an addition to provide space for enlarged equipment. George A. Frey is secretary and treasurer, and George E. Nye is superintendent.

New Jersey, Riverside. Christian Dick has recently added new machinery and has been installing a Cyclone dryer from the Philadelphia Textile Machinery Co. and a cold hosiery press from the Automatic Machine Works of Reading. This plant is running in full on seamless and ribbed hosiery.

*New York, New Hartford. Improvements at the Olympian Knit Goods Co. consist of putting another story on the main building by changing the gable roof to a flat roof. This will give 4,500 square feet additional floor space, which is needed for a rearrangement of the equipment they now have. D. L. Davies is treasurer and superintendent. Men's ribbed underwear, sweaters, cardigan jackets and similar goods are manufactured.

North Carolina, Elon College. The directors of the Swannie-Noah Mfg. Co. are contemplating the addition of several new knitting machines in the near future. They manufacture half hose and women's seamless hosiery.

*North Carolina, Enfield. Repairs for the present in the Enfield Hosiery Mills are completed. They are thinking of putting in a new boiler, but no decision will be made regarding this for several months. This concern was formerly known as the Enfield Knitting Mill.

*North Carolina, Flat Rock. The addition to the Skyland Hosiery Co. will be 50 by 116 feet, two stories high and basement, and will be used for dyeing and finishing plant. If the present plans are carried out, it will be completed and machinery installed by March 15. The capital stock is $150,000. John F. Wilcox is president. H. E. Stillwell is treasurer. F. S. Wilcox is general manager, and C. P. Rogers, superintendent. F. S. Wilcox and C. P. Rogers attend to the buying.

North Carolina, Lynn. There is no truth in reports that the Tryon Hosiery Co. is removing to Flat Rock. The company is not moving, but is enlarging its works at this place.

North Carolina, Winston-Salem. The P. H. Hanes Knitting Co. is installing a number of new knitting and sewing machines in a new building on the opposite side of the street from their main plant. They expect to have the new equipment in operation within a few weeks.

Ohio, Cincinnati. A three-story addition, 40 by 50 feet, will be built for the Adler Underwear & Hosiery Mfg. Co. and will be used as a wool carbonizing plant.

*Ohio, Cleveland. The proposed addition to the plant of the Friedman-Blau-Farber Co. will be four stories high, 116 by 152 feet, and will be equipped for manufacturing sweaters, gloves and mittens. 20 new looms and 125 new knitting machines will be installed.

Ohio, Piqua. An addition, 65 by 300 feet, will be erected for the Atlas Underwear Co.

Pennsylvania, Allensville. Orders have been placed by the Allensville Hosiery Company for additional machinery. A line of seamless women's hosiery will be added. In the past half hose only has been made on twenty knitting machines. J. T. Zerby is superintendent.

Pennsylvania, Harrisburg. A two-story addition will be built for the Wellknit Hosiery Co., giving about 1,000 feet additional of floor space. New machinery will be installed. It is also reported that plans will soon be prepared for a large four-story concrete building for Mr. W. G. Starry, president of the Wellknit Hosiery Co., in which he will start a new knitting factory. Recently Mr. Starry took over the interest of Mr. E. F. Slear in this business.

Pennsylvania, Philadelphia. Brownhill & Kramer, Memphis St. and East Columbia Ave. have recently increased their capacity by installing 30 Standard 200-needle machines.

Utah, Lehi. The Standard Knitting Co. has been purchased by James Kirkham & Sons Co., and will be operated in the future under the style of the Lehi Knitting Works. They have recently completed a new building, and are interested in

all necessary machinery and supplies for manufacturing men's, women's and children's underwear and hosiery.

*Vermont, Northfield. Additional machinery is being installed by the Vermont Hosiery & Machinery Co., to increase the output.

Virginia, Lynchburg. The Lynchburg Hosiery Mills have been incorporated with capital stock of $50,000. J. G. Burton is president, general manager and buyer, and C. G. Burton is secretary and treasurer. This company was formerly a copartnership. They manufacture cotton, woolen and merino half hose, operating 105 knitters, 19 ribbers, 26 loopers, and 21 sewing machines. At present, the plant is being operated night and day on a large government order. They buy 7s to 2/40s carded and combed cotton on cones, also wool and merino yarns. Within a short time they plan to add 50 knitting machines. The product is dyed and finished at the plant and sold direct.

*Wisconsin, Appleton. The Fox River Valley Knitting Co., whose plant at Menasha, Wis., was destroyed by fire several weeks ago, has bought the Remington Watch Co.'s building on Second Ave., which they are equipping with knitting machinery, and will begin manufacturing in four to six weeks. They make half hose and lumbermen's socks and mittens. The plant will have a complete dye house and will operate by steam power. Jos. Eggers is president, D. Nottage is treasurer and buyer, and J. Steinborg is superintendent. The company has received a bonus of $1,000 a year for five years from the city.

Wisconsin, Menasha. Officers of the Fox River Valley Knitting Co. have been elected as follows: C. Madson, president; C. S. Smith, vice-president; David Nottage, treasurer and general manager; H. L. Marcomb, secretary. The company will rebuild in Appleton, Wis., and the plant in Menasha, which was damaged by fire, will be abandoned.

Mills Starting Up.

Tennessee, Johnson City. The Unaka Knitting Mills have been purchased by A. L. Bassett of Flat Rock and plant has started manufacturing.

Facts and Gossip.

California, Colton. The California Hosiery Mills Co. has been incorporated with capital stock of $5,000 to manufacture hosiery. E. B. and D. W. Willit and S. L. Adams, all of this place, are the incorporators. They conduct a department store.

Connecticut, Tariffville. It is reported that a knit goods manufacturing company will lease space in the building formerly occupied by the Tarriffville Lace Mfg. Co.

Georgia, Atlanta. Samuel W. Wilkes is interested in establishing a cotton yarn and hosiery mill in this city, and would like to interest capital and receive data relative to a mill of this kind.

*Illinois, Rockford. Reports to the effect that the Burson Knitting Company will add several hundred knitting machines is incorrect. They are not building an addition, nor buying machinery.

*Massachusetts, Stoughton. Charles Stretton & Sons have been looking over sites in Brockton, with a view to locating their plant in that place. They say they would like to locate in Brockton, but are unable to find anything satisfactory. They are anxious to get a building at once to continue the business, but will probably rebuild the burned plant in Stoughton. No definite plans have been made.

*Minnesota, Rushford. Owing to the unsatisfactory supply of labor, the Rushford Knitting Mills have decided to seek a new location. At the annual meeting of the stockholders, held January 22, they stated that the present capacity of the mill is about $50,000 annually, but that this amount could be doubled with the addition of machinery, which it was contemplated adding, but for which operatives cannot be secured in their present location. At the present time it has not been decided where they will remove to.

New Hampshire, Nashua. Articles of incorporation have been filed for the Granite State Knitting Co., with capital stock of $10,000. The new corporation takes over the business of the Granite State Knitting Co. at 27 Water St.

New Jersey, Newark. The Up-to-Date Knit Goods Co. has been incorporated with capital stock of $25,000, and will take over the business operated under the same name by Hugo Lindner. They manufacture high grade knit goods for men, ladies, and children. Hugo Lindner is president and buyer, Sophia Lindner is treasurer. Product is sold through H. E. Mallory & Co., New York.

*New Jersey, South Amboy. It is stated that underwear, dress goods, etc., are to be manufactured at this place by the Acme Underwear Company, recently reported incorporated with capital stock of $100,000. Charles Jacobs, Marion O'Keefe, and Victor C. Coppin are the incorporators.

New York, Kinderhook. It is reported that New York parties are negotiating for the Columbia Knitting Mill's property, and if they are successful the plant will be enlarged, and a line of sweater coats will be manufactured. At present, gloves, mittens, toques, sweaters, and similar goods are made.

*North Carolina, Fayetteville. No definite action regarding the establishment of the proposed knitting mill has been taken by R. G. Harrison.

North Carolina, Gilkey. H. M. Geer of the H. M. Geer Lumber Co. wishes to get information concerning knitting mill machinery. He wants prices on winding machines, dyeing machine, also wants to know about the different makes of knitting machinery, prices, etc. He is probably considering going into the business but does not state what kind of goods he is going to make.

Personals.

Frank Marcaurele has accepted a position as second hand in the carding department at the Fuld & Hatch Knitting Company, Cohoes, N. Y. He comes from New Bedford, Mass.

Frank E. Fairchild, superintendent of the Canasawacta Knitting Mill, Sherburne, N. Y., has resigned.

E. W. Billings, superintendent of the Amazon Knitting Company, Muskegon, Mich., for the past five years, has resigned.

New Machinery and Processes.

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to textile manufacturers. It is not a list of patents, but of improvements coming on the market. The idea being to present to our readers a systematic monthly record of new machinery etc., of interest to textile mill men.
We invite machine builders and others to send us such information for this department.

The Electrolyzer. The National Laundry Machinery Co., Dayton, O., are putting on the market a machine for producing bleaching liquor from water and ordinary salt by means of electricity. It is highly spoken of by knit goods manufacturers who have installed it.

Electric Singeing Machine. The Society Anonyme Electro-Textile, whose American office is at 136 Liberty St., New York, are putting on the market an electric singeing apparatus for yarn, which is claimed to have many advantages in producing a uniform product under conditions more helpful and more economical than by gas processes.

Scutcher. Asa Lees & Co., Oldham, England. An improved scutcher with cone feed regulator. The pedal levers are mounted below the feed rollers and connect with a series of levers and links which transmit the motion of the pedals to the cone strap fork.

Automatic Loom. Louis Schoenherr, Chemnitz, Germany, has recently placed on the market a loom with an automatic shuttle-changing device, which is said to be giving good results in German mills.

First Breaker Feed. Paul Schuerer, Leubnitz-Werdau, Germany. An attachment for self-feeds on first breaker cards, the object being to prevent irregularity in the weighing of the material.

Yarn Tester. Ferdinand Zedlitz, Habendorf, Germany. An improved instrument for testing the strength and elasticity of yarn. The inventor is an overseer of spinning in Habendorf.

Stop Motion for Looms. George Hattersley & Sons, Keighley, England. A mechanical stop-motion for looms. When an end breaks a drop pin falls into an oscillating tube causing the loom to stop.

A Pin for Loom Chains. Cook & Co., 18 Exchange St., Manchester, England. An improved pin for fastening the links of filling and warp chains on looms. The pins can be readily removed when alterations are necessary and without the aid of pliers. They can also be used over again indefinitely and when fixed are not liable to drop out.

Chenille Machine. Gustav Hedrich, Bermen, Germany. A machine for the manufacture of chenille which is said to be capable of a largely increased production.

Leno Device. Marinus Seckel, Enschede, Holland. An improved leno attachment which has been introduced into a number of English and Continental mills.

A Tension for Spoolers. Maurice Hans, Le Val d'Ajol, Vosges, France. A tension device for spoolers. The yarn passes through a spiral groove in a conical piece. It is stated that a very uniform tension is obtained.

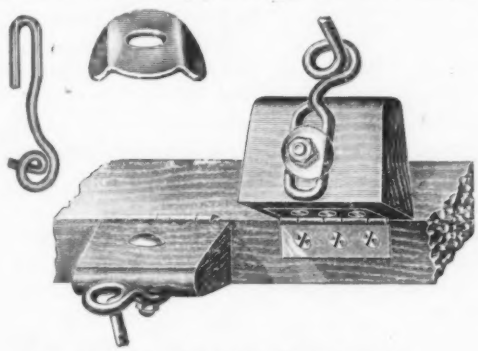
Hydraulic Mangle. C. G. Haubold, Jr., Chemnitz, Germany. An improved hydraulic mangle, for which the claims are a large production and a high class of work.

Hydraulic Press. Carl J. Schiffers, Aachen, Germany. An arrangement for loading and unloading hydraulic presses with the cloth that has been folded in papers.

Covering Cotton Spinning Rolls. S. Chapman & Co., 5 Carr St., Blackfriars St., Manchester, England. A machine for clothing and calendering the covering of cotton spinning rollers. The rollers having been pasted and the clothing wrapped on by hand, they are then placed in the machine and calendered. The operation secures the cloth firmly in position, and at the same time it presses the cement home and causes it to dry quickly.

ADJUSTABLE THREAD GUIDE.

The I. E. Palmer Co., Middletown, Conn., have perfected their wire adjustable thread guide to a point where it produces immeasurably better results than the common guide with its crude principles of attachment and adjustment. The saving in parts and repairs, and the increase in both quality and quantity of production produces a substantial saving. There is nothing complicated or difficult about this improved guide. No intricate mechanical principle is involved. The inventors simply recognized a common



THE PALMER ADJUSTABLE THREAD GUIDE.

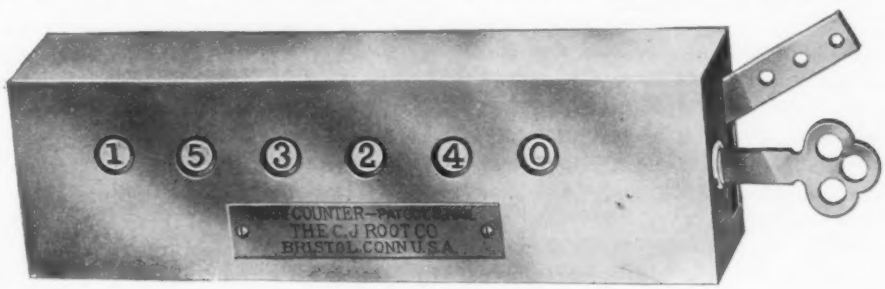
abuse and have corrected it in as simple a way as possible. The wire guide is convenient and simple so they adopted it and provided superior methods of attachment and adjustment, reducing the wear and in many cases allowing an increase in the speed of spinning frames. This is produced by a uniformly correct centering of the thread with respect to the spindle.

The guide consists simply of a specially bent guide wire attached to the ordinary wooden clapper of any spinning frame by screws or by bolt and nut. No expert machinist is required to attach the guides and a spinning frame may be equipped while in operation by simply breaking back the roving of a few spindles at a time. The company also supplies tools especially designed for equipping machinery with their guides, which renders the installation of the guides extremely easy and rapid.

A NEW COUNTER.

The C. J. Root Company, of Bristol, Conn., manufacturers of the well known "Bristol" and "Elm City" counters, have lately put on the market what they consider their best counter, the "Root." It is the invention of the late Charles J. Root, and is believed to represent the highest development in counting machines to date. Among the claims made for it are the following: Its salient virtue is simplicity. It has few parts and no springs, is positive in action, cannot jump, will run at any reasonable speed, and lock at every change of figures. The dials cannot be tampered with until the case is unlocked, making it especially valuable for royalty and piecework purposes. It may also be furnished in a closed case without lock, where resetting is not desired.

It requires very little power, and no more when all six figures are moving, than if only one is moving. The wearing surfaces have been reduced to a minimum. It is simple, strong, sure, accurate, and durable. The resetting is the work of an instant only. Unlock the case and pull the dials out one-quarter inch, and turn to zero or any desired number.



THE "ROOT" COUNTER.

Where it is desired to attach counters to

machines leased on royalty or where operators are on piece-work, or if it is desired to ascertain the number of strokes or revolutions of a pump, engine, waterwheel, or dynamo, during a night shift, or at any other time when there might be danger of tampering with the register, the "Root" counter with its locked case, ease of action, reliability, durability of construction is recommended as peculiarly serviceable. On account of the minimum of power required to operate, it is especially suited to many automatic and semi-automatic machines making small and light articles, where the older type of counters with springs cannot be successfully applied.

Those who have unusual or difficult counting problems on hand are invited to correspond with the manufacturers. They have found that many manufactured articles, hitherto weighed, measured, or counted by hand, may be accurately counted automatically, at some stage of the manufacture and at a considerable saving of time and expense.

Catalogue 18 of The C. J. Root Company, Bristol, Conn., gives full information with illustrations of the "Root" and the other well-known and long-tried counters which they make.

THE COST OF STARTING UP A NEW TEXTILE MILL.

A most intangible but a very real expense incident to the cost of a new textile mill and equipment is that concerned with starting up. Only after a period of several months can the entire plant be brought into a condition approximating maximum efficiency. There are wastes on every hand, not only those resulting from absolute errors or slight inaccuracies in the setting, but a host of minor losses—in material, in power and in human effort that in the aggregate mount up to a considerable sum. In a recent report F. W. Dean, mill engineer and architect, Boston, makes an allowance of no less than $10,000 for the single item of "starting up," aside from that of erecting in the case of a mill equipment costing about $200,000—an amount equivalent to 5 per cent. of the total cost. During the tuning up process frictional losses in shafting, belting and machinery are excessive, the operatives, although generally experienced, have to accommodate themselves to new conditions, there are recurring breaks and stops, with a resulting excess of poor work. All these combine to increase the unit cost of production to an extent that should not be overlooked. It has been estimated that in a textile mill fully one-half of the operating expense for three months should be charged as the cost of starting up.

"DUXBAK" LEATHER BELTING.

Durability is one of the prime requisites of leather belting and for which every buyer aims in making his purchases regardless of the development of the mill in which the belt is to be used. There are many rooms in textile mills where the durability of ordinary belting is greatly impaired by the surrounding conditions. Take for example dye houses, wet finishing rooms and other rooms in which there is a great deal of moisture in the air, belting is subjected to a very severe test.

The "Duxbak" leather belting is manufactured by the Charles A. Schieren Co., 30-38 Ferry St., New York, to meet the requirements of such conditions. The reduced cost of the belting owing to its great durability is an important item and every mill man knows that it is not the only advantage that results from using belting that is ready for the tight pulley whenever required.

The breaking of the belt will cause a loss of production and may cause serious damage to the goods by the interruption of the process. Taking all of these things into consideration, no manufacturer can afford to use in damp work-rooms any belting that is not especially adapted for such places. The Charles A. Schieren Co. have manufactured the "Duxbak" belting for a long time and the experience with it under the most exacting conditions warrant them in claiming that it is unequaled for places it is necessary to expose to more or less moisture.

The following letters from users of the "Duxbak" belting speak for themselves.

Columbus, Ga., Nov. 5, 1908.

Gentlemen: You will recall that on Oct. 22, 1907, you sent us for trial use in our dye house, 100 feet of your 6-inch "Duxbak" waterproof leather belt.

It may be of interest to you to know that while some so-called waterproof belts have worn out in two or three months, your sample is still in use and so far has given entire satisfaction.

We take the liberty of letting you know this because waterproof belts of real merit that will stand hard usage in an atmosphere loaded with steam and chemical fumes is hard to find, and we do like to say a word to encourage the maker of such an article when we find it.

Truly yours,
J. D. Massey, Treas.
Eagle & Phenix Mills.

Brooklyn, N. Y., Oct. 16, 1908.

Gentlemen: I have used your belting for several years and since you introduced your Duxbak waterproof belt I have bought several for work on extractors and washers with very satisfactory results.

My main belt is also a Duxbak waterproof belt and is in operation where the belt is in contact with oil as well as dampness.

I am glad to testify to the merits of your Duxbak belting and remain,

Yours truly,
W. G. Jughardt.

L. I. City, N. Y., Nov. 3, 1908.

Messrs. Chas. A. Schieren Co., 30 Ferry St., N. Y.

We have your "Duxbak" waterproof leather belting in satisfactory operation in our works in various widths, including 15-inch double. Some of these belts have been in use over one year.

Last spring we put in two 8-inch double "Duxbak" waterproof leather belts for what we consider the hardest work we have, and these belts have given us entire satisfaction.

Nearly all of our belts are working where there is a great deal of dampness, and in some cases where mineral oil comes in contact with them.

Yours truly,
William Bradley & Son.

LIMIT OF SAFETY IN STORED COAL.

The coal department of the Arthur D. Little Laboratory, Boston, has found instances where a small coal pile cooled down after being as hot as 165° F. This was probably a rare occurrence as the temperature generally increases rapidly as the coal heats up above 150° and there is no doubt but that when 212° is reached the coal must be moved or some steps be taken to cool it in order to prevent fire. Temperatures as high as 485° have been observed, and at this temperature the coal ignited when exposed to the air.

THE ELECTROLYZER.

A MACHINE FOR PRODUCING BLEACHING LIQUOR FROM ORDINARY SALT WATER BY ELECTRICITY.

A simple machine known as the "Electrolyzer" is being placed on the market by the National Laundry Machinery Co. of Dayton, Ohio, which produces at low cost a bleaching liquor from ordinary salt and water by means of electric current. Thousands of these machines are used in Europe and it has been most successfully introduced for laundry work in this country and has recently been installed in several prominent knitting mills in the Middle States with success, one of the installations being at the Wayne Knitting Mills at Fort Wayne, Ind., probably the largest knitting mill in the country, and another recent installation at Thornapple Knitting Works at Middleville, Mich.

This machine produces bleaching liquor without the use of chloride of lime and by means of a very simple process, the ingredients being nothing but water, common salt and electricity. The great advantage claimed over the chloride of lime bleach is the improvement in the "feel" of the goods, the removing of all possibility of tendering the fabric, as well as the saving in the cost. The Electrolyzer gives a bleaching liquor which is always uniform in strength and it is claimed that the electrolytic bleach, although dependent upon chlorine as its active agent, is more powerful in its action than solutions of bleaching powder of the same chlorine strength and yet with less injurious effect on the fiber. It also enables the user to determine the presence of acid or alkali in the finished product. It is simple and clean in its operation and requires no skilled attention.

The following quotation is from a letter received from a knitting mill where the Electrolyzer has been in use long enough to form a good opinion of its value:

"Up to the time of installing your machine, we had chloride of lime, same as most other knitters. Since installing the electric bleach we have been more than pleased with the results obtained from same, and espe-

cially so since they furnished us the Electrolyzer that makes a bleach testing 5 per cent. Chlorine gas, or the bleaching agent. On this basis we get most attractive results at a lower cost than chloride of lime, and with no possibility of tendering the fabric. It leaves the fabric loftier and softer than it is possible to obtain from chloride of lime."

It is not an expensive apparatus to install and would seem to merit the careful attention of knit goods bleachers and manufacturers.

AN EFFICIENT AND ECONOMICAL METHOD OF CLEANING MILLS AND MACHINERY.

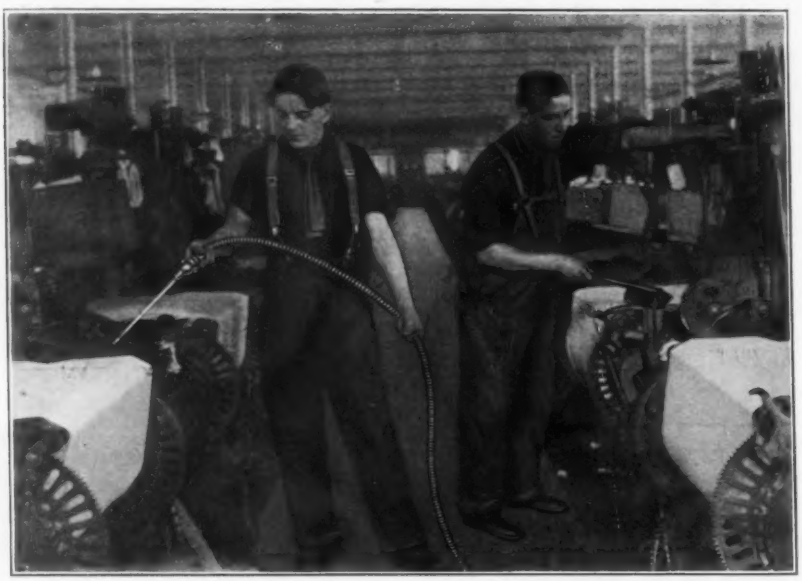
The method is by means of compressed air.

It is a subject which, while not entirely seem to have been satisfactorily determined.

At a certain New England plant, we are informed that compressed air cleaning adopted in a spinning mill containing 50,000 spindles, shows a profit of $1,600 per year in reduction of pay roll and increased production. The reduction in the pay roll comes about in that fewer cleaner hands are required.

At another New England mill, compressed air cleaning has been applied in weave rooms running on coarse print cloths. Each weaver cleans her own looms and it is possible for her to clean 10 looms in 12 minutes. After the operative learns the method of handling the air hose, she learns to blow the lint and fly down—is careful in case of blowing out gears so that the oil will not be blown on to the product.

Very little instruction and experience are



CLEANING LOOMS BY THE NEW AIR PROCESS, CONTRASTED WITH THE OLD BRUSH METHOD.

novel, has developed more of late than heretofore.

When cleaning by compressed air is spoken of, we include not only the machinery itself, but shafting, ceilings, motors, etc. There seems to be a fixed idea in some quarters that compressed air cleaning cannot be applied to mills running on very fine numbers, but just where the limit is, does not

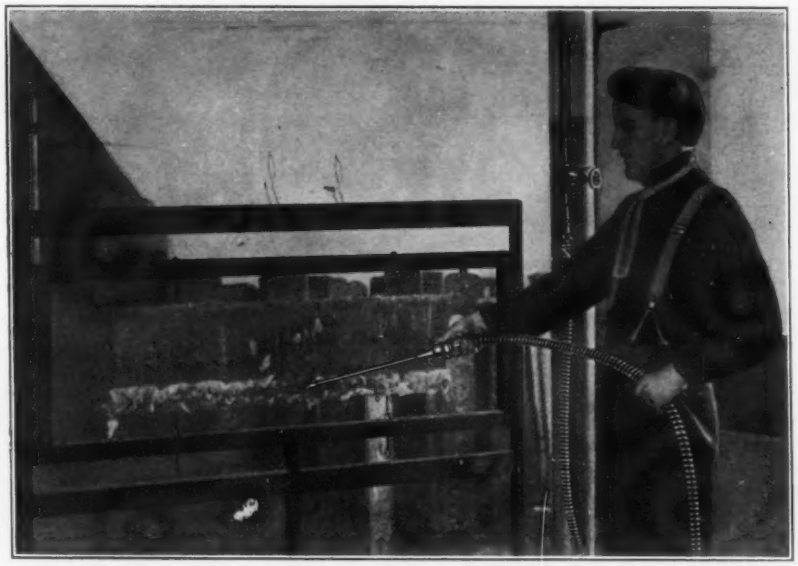
required of the operative before it may be turned over for regular use, the same as any other portion of the process, and the weaver becomes very efficient with it. After a loom or spinning frame has been thoroughly blown off, the dirt and fly can be blown along the floor and aisles, there gathered in piles, to be taken up by hand.

While it may be thought that vacuum

cleaning might be the ideal method, the practical difficulty with that principle seems to be that the vacuum nozzles, in order to do effective work, must come in very close contact to the dirt which is to be removed. This is frequently impossible among the intricate parts of textile machinery.

Ideas seem to vary as to the best conditions under which compressed air can be used for cleaning, but long experimenting at one large plant has seemed to prove that 30 pounds pressure through a 1/8-inch orifice gives very satisfactory results. Under these conditions, about 10 cu. ft. of free air per minute are required, and this does not give a strong enough blast to break down the ends or to carry the lint and fly to an unreasonable distance on to the other machinery. In other words, in weaving it is possible for a weaver to stop one loom and clean it without running the risk of blowing the lint into the work of the adjacent looms.

Since the introduction of the Turbo-Humidifier, The G. M. Parks Co., who are sole agent for this device, has installed numerous humidifier installations of which compressed air cleaning is a feature, added at a very slight additional expense, the compressed air connections being taken off the same air piping which supplies the humidifiers. With this arrangement, it is not necessary to shut down the humidifiers in order to use the compressed air cleaning apparatus. The usual method is to install a suitable number of connections in a given room, such that a 50 or 60-foot length of hose will reach any part of the room when moved from one outlet to another. The moving of the hose is not a serious matter, because of the fact that Joy quick-hitch hose couplings are invariably used in these installations. The load of the air compressor can be easily governed by limiting the total number of lengths of hose, each weaver merely passing the hose along to the next one, when her own looms are cleaned.



CLEANING LOOM HARNESSES BY COMPRESSED AIR.

The United States exported 7,569,315 bales of cotton and consumed 4,089,938 bales in 1908, and exported 8,503,265 bales and consumed 4,965,498 bales in 1907.

From 50,000 to 60,000 tons of cotton are used yearly in Muelhausen, from a quarter to a third being Egyptian, and the rest American and Indian.

THE LOMBARD NEW CENTURY CARD.

An important improvement in woolen cards is offered to the trade by the Lombard Machine Co., Worcester, Mass. It is the invention of James J. Rae, a practical carder, and consists in a new arrangement of the workers and strippers by which the carding contacts of the machine are greatly increased in number and efficiency. As every carder knows, the capacity of a card is limited by two factors, the ability to card the material properly and the capacity to condense the roving after it comes from the finisher doffer. The important improvements in condensers have, during recent years, placed the condensing power of the cards far beyond the carding power and it is to increase the latter that the Rae system has been devised. The principle is made plain by Fig. 1, which shows a pair of Rae workers and a stripper which serves for both. In this system the workers are arranged in pairs with a stripper for each pair. The stock passes from the cylinder to the first worker of the pair from which it is taken by the stripper and deliv-

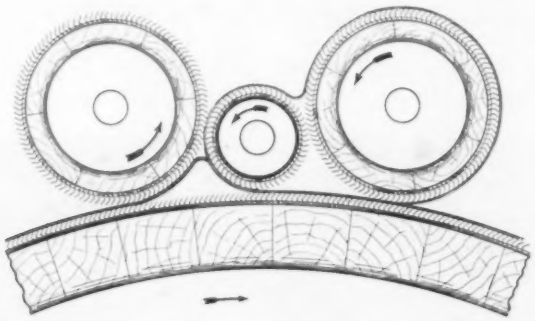


FIG. 1.

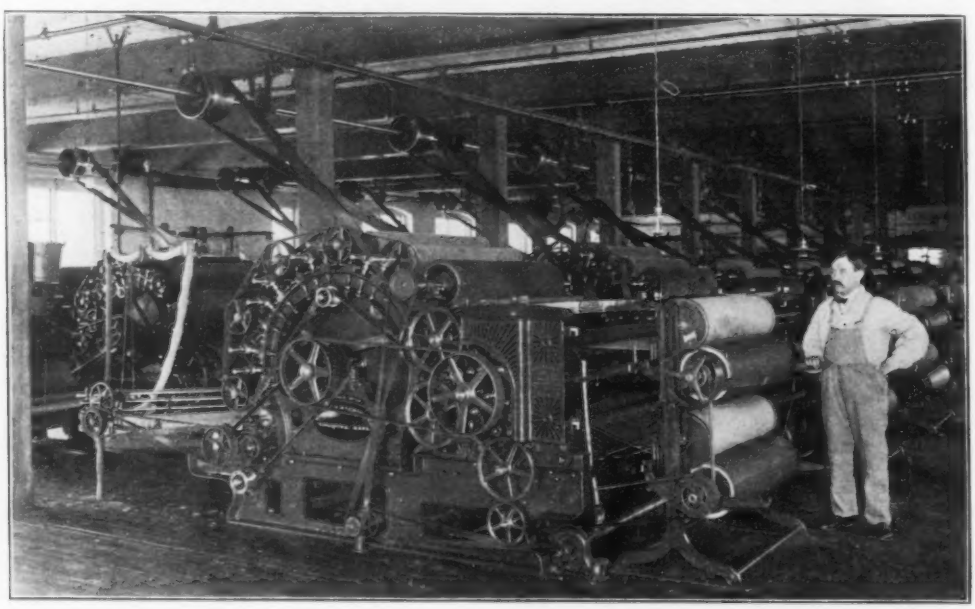


FIG. 2. A LOMBARD FINISHER CARD.

ered to the cylinder again as shown in Fig. 1. The material is then carried by the cylinder to the point at which it is delivered to the second worker by which it is carried around and delivered to the same stripper that serves for the first worker. The stripper thus carries two thicknesses of material, one from each worker, and delivers it to the cylinder. This process is repeated at each pair of workers.

Fig. 2 shows a finisher card arranged in accordance with the Rae system. Fig. 3 is a view of a first breaker Lombard card arranged by the Rae system.

It will be readily understood that by this method of arranging the workers and strippers a greater number of workers can be used on a card than with the old system by which there was a stripper for each worker.

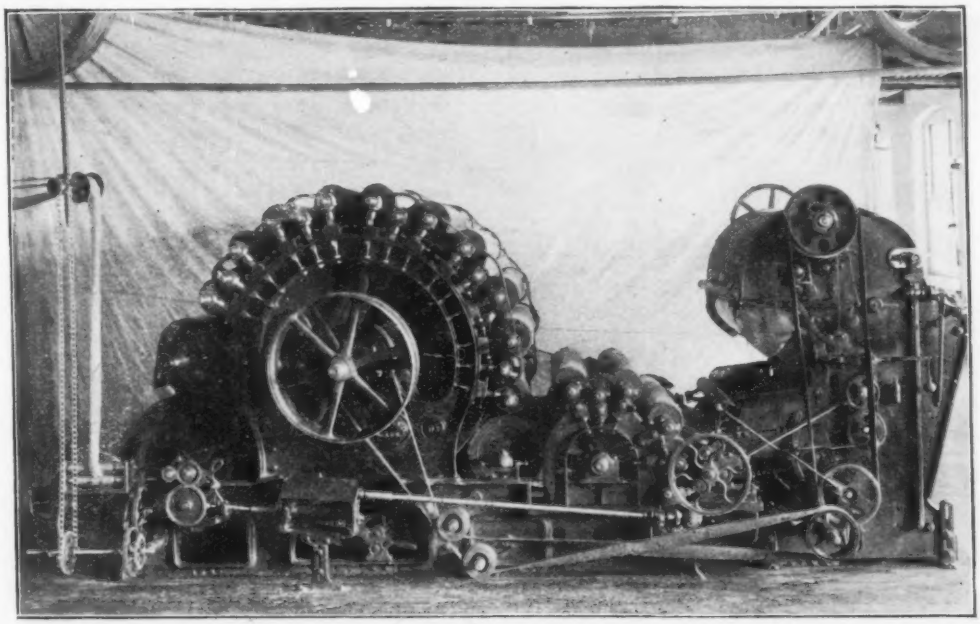


FIG. 3. A LOMBARD FIRST BREAKER CARD, RAE SYSTEM.

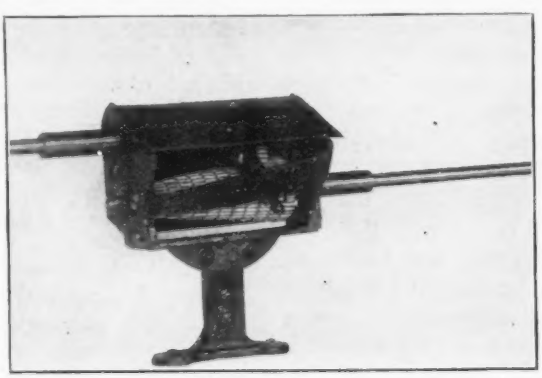


FIG. 4.

It has been found that on a 48 by 48 breaker card 10 workers can be used by the Rae system as compared with only 6 workers by the old method. The 6 workers under the old system require 6 strippers, whereas the

10 Rae workers are served by 5 strippers. On a 48 by 48 finisher card 8 Rae workers can be set as compared with 5 workers by the old style. On a set of 3 cards 28 Rae workers can be used as compared with 17 workers by the old style. This comparison explains fully the reason why it has been found that with the Rae system a two-card set will often do more work than a three-card set by the old style.

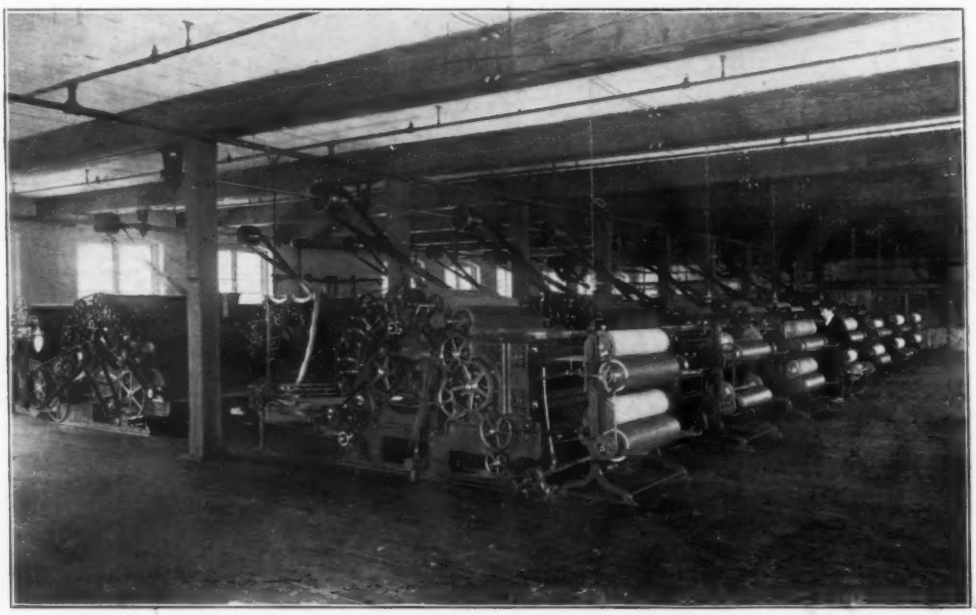


FIG. 5. A CARD ROOM EQUIPPED WITH THE LOMBARD NEW CENTURY CARDS, RAE SYSTEM.

The new method reduces the space required for the carding process and effects a saving of power, clothing and waste.

The Lombard Machine Co. inform us that tests of this card on long stock demonstrate that in addition to the increase in the production and improved efficiency of the carding, no deterioration of the staple results, as there is ample space between the points at which the cylinder and stripper come in contact with the worker to allow for a manipulation of the fiber at its full length. The builders of the card state that the card can be set and the speed and direction of the workers varied as in the old system. It is also possible to remove a worker for grinding, substituting a false worker, and it is claimed that more workers can be placed on a card of a given diameter by this system than in any other way.

The Lombard New Century cards are built with either iron or wood cylinders and manufactured from the best quality of carefully selected material. The workmanship is thorough in every respect and special attention has been given to obtaining a simple construction capable of easy and accurate adjustment of all the parts. One of the latest improvements to be adopted is the method of changing gears on the side feed. A gear box, shown at Fig. 4, is attached to the card frame and contains 11 graduated gears of different sizes on a shaft. An intermediate gear on a sliding arm makes it possible to connect the feed with any one of these gears, thus changing the speed almost instantly.

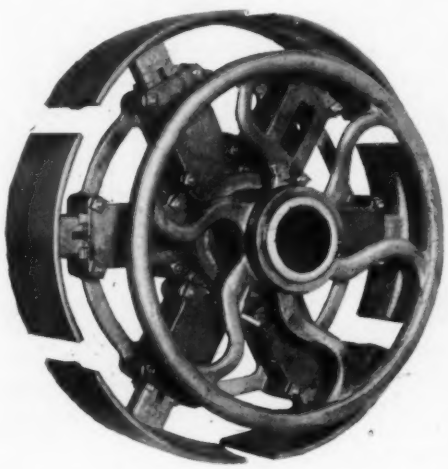
The Rae system can be readily adapted to old cards if desired and at slight expense. Fig. 5 is a view of a card room in a New England mill with 7 Lombard two-card sets running with the Rae system.

Ninety per cent. of twill work takes place at the back of the card. On the Rae system this is almost wholly overcome through the stock coming in contact with so many workers.

AN IMPROVED EXPANSION PULLEY.

The Taylor & Fenn Company of Hartford, Conn., has placed on the market an expansion pulley that is designed so that the parts are interchangeable, and by manufacturing these pulleys in quantities a high grade pulley is produced at a low cost.

There is a large field for these pulleys where two or more machines are run in conjunction, the cloth passing directly from one machine to another. It is important to regulate the speed of these machines so that there may be a uniform tension on the cloth.



This result is best obtained by driving the machines by expansion pulleys. By adjusting these pulleys to the proper diameter the correct speed may be obtained.

The rim of this expansion pulley is made up of segments cast to the arms. The arms sliding in guides in the center are adjustable for different diameters by means of screws which are operated by the hand wheel to which they are connected by bevel gears. This hand wheel may be locked in any desired position by means of a binding screw, thus preventing any change of adjustment.

In the manufacture of these pulleys great care is taken to insure the absolute interchangeability of the parts, thus decreasing the cost of production and making it possible to replace at once any parts which might be broken. By means of interchangeable bushings any size bore up to 4 3/4 inches may be obtained.

These pulleys are regularly manufactured in four diameters, each size having an adjustment in diameter of four inches and a standard width of face of six inches. The sizes are 18-22 inches, 23-27 inches, 28-32 inches and 32-36 inches. The 18-22 inch size has four arms and the other sizes six.

There are a large number of these pulleys in use among the textile mills and their popularity is constantly increasing.

IMPROVED MACHINE FOR SINGEING YARNS.

THE SOCIETE-ANONYME ELECTRO-TEXTILE, PARIS, FRANCE. AMERICAN AGENCY 136 LIBERTY ST., NEW YORK.

Singeing by gas, employed for the first time in 1847, has since that time been done by many different machines, each aiming in its own way to secure increased rapidity of working with a corresponding reduction of gas and labor.

In view of the fact that electricity is the most easily handled and adaptable of all agents for the transformation of energy, it might be anticipated that it would find application to an industry of such a delicate character as singeing. Nevertheless, despite the apparent simplicity of the problem, a period of more than thirty years has been required to attain a satisfactory and really practical result. The object of electrical singeing is to utilize the heat radiated by an incandescent conductor of electricity for burning off the down on the yarn.

The employment of industrial currents has been rendered possible by Gin, who uses as the incandescent body a long metal tube of a circular and flattened section and opening along a generating line to permit of the insertion and suspension of the yarn. Gin adopted the plan of leaving one end of the tube movable, and subjecting it to a sufficient longitudinal tension to keep it perfectly straight, without reaching the limit of elasticity of the metal.

The following particulars and illustrations relating to the system invented by Gin have been supplied by the Societe Anonyme Elec-

tro-Textile, of Paris, makers of the improved electrical singeing machine. Fig. 1 is a perspective view of a singeing tube, the body of which, a, is in the shape of a flattened cylinder, with an opening all the way along. The electrical connection is effected by means of the lugs, b. The yarn may also be passed through several consecutive tubes, arranged in series, as shown in Fig. 3; or again, through a single piece bent over several times as in Fig. 4.

In order to afford a clear idea of the application of the means adopted to counteract the expansion of the tubes, a unit of the gassing apparatus is illustrated in Figs. 5, 6, and 7. The platinum tube, a, is connected by means of its terminal lugs with two metal clamps, one of which, b, is fixed, while the other, c, is free. The latter carries rods, d, capable of sliding in the guide apertures of the U-piece. The lugs of the burner are fastened to the clamps by means of milled-head screws. The connecting clamps are connected with the current leads by spring clips, and the junction between the movable clamp and the corresponding clip is effected by flexible cables as shown. The two clips and the fixed clamp are mounted on a base-plate of slate or ebonite, i, to which is also attached a porcelain casing, k, to lessen the loss of heat by radiation from the platinum tube.

A great improvement has been effected in these electric singes by modifying the shape of the platinum tubes. It has been mentioned that in order to permit of the passage of the yarn, the tube is opened all the way along a generating line. If now it be at the one end, along the diametrically opposite generating line, two symmetrical strips are formed, which may be bent round spirally, thus furnishing a flexible connection which gives with all the movements of expansion made by the tube, and prevents any deformation of the latter.

Any number of these tubes may be mounted on bars carrying the current, and in this way a machine of any desired number of drums may be formed. The current is supplied to the outermost bars by a special transformer, shown diagrammatically at r, which receives the primary current at the tension of the main, and supplies the secondary element with current at a tension and density corresponding to the number and dimensions of the units, and in accordance with the desired temperature. This temperature depends on the number of the yarn and on the speed at which it is put through the machine, and it may be regulated by varying the number of turns of either the primary or secondary windings by means of a step commutator, s.

With a sufficient number of steps it is possible to obtain any temperature between dull red heat and dazzling red heat and dazzling white heat.

The burners are mounted on a creel sim-

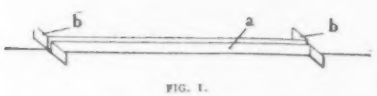


FIG. 1.

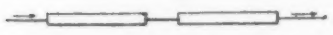


FIG. 2.

FIG. 3.

FIG. 4

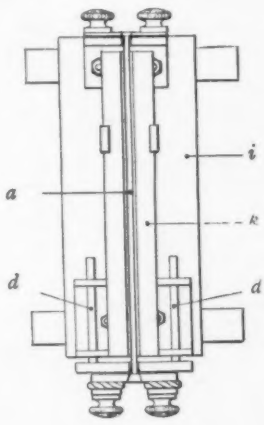


FIG. 5.

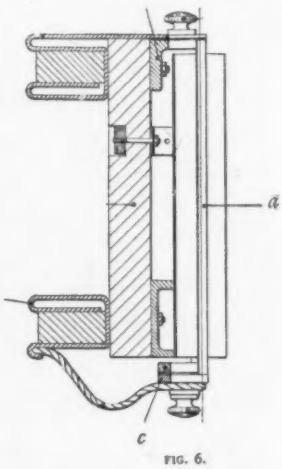


FIG. 6.

ilar to those employed in ordinary gassing machines, in which the operations of unwinding, gassing, and rewinding the yarn proceed continuously. After having traversed the burner, the yarn which is guided in a suitable manner, enters a helicoidal groove provided in a revolving drum. In traversing this drum the yarn receives an alternating movement of translation, which enables it to be wound on a bobbin held in the form of a cheese. This bobbin is held in contact with the helicoidal pulley, which causes it to revolve in such a way that the winding is effected at a constant peripheral velocity. The drums of the machine are mounted on a common shaft, which may be operated direct by an electromotor, or driven by pulleys through a second motion. In the latter case a series of change gears enables different winding speeds to be obtained.

The commutators of the starting and excitation resistances are mounted on the same board as the commutator of the transformer supplying the current to the burners, so that the attendant has convenient access to all the means of controlling the machine. The steps of these commutators, as also those of the transformer, may be marked to indicate the most suitable to use for different yarn numbers. The machine is completed by the provision of a yarn catcher, to facilitate the piecing of broken yarns and restarting the machine after stoppages. The complete elimination of the dust and products of combustion is effected by suction tubes arranged under each burner and connected with a main trunk communicating with a fan. By this means the ventilation of the gassing room is greatly improved when electric singers are used. Each machine can, as already mentioned, be easily managed by a single attendant.

The disadvantages of gas singeing compared with electric singeing are set forth as follows:

The gassing of yarns by means of burning coal gas presents a number of inconveniences. The consumption of gas is great, and the utilization of the heat is so imperfect that more than 96 per cent. of this heat is completely lost by dissipation in the air of the gassing rooms. Furthermore, the fluctuation in the pressure of the gas from the mains at different hours in the day result in a corresponding irregularity in the gassing process; and this unevenness is accentuated by the flickering of the gas flames in the slightest draught. Owing to the impurities and tarry matters contained in the gas, the color of the yarns is often spoiled, and they also acquire a characteristic disagreeable

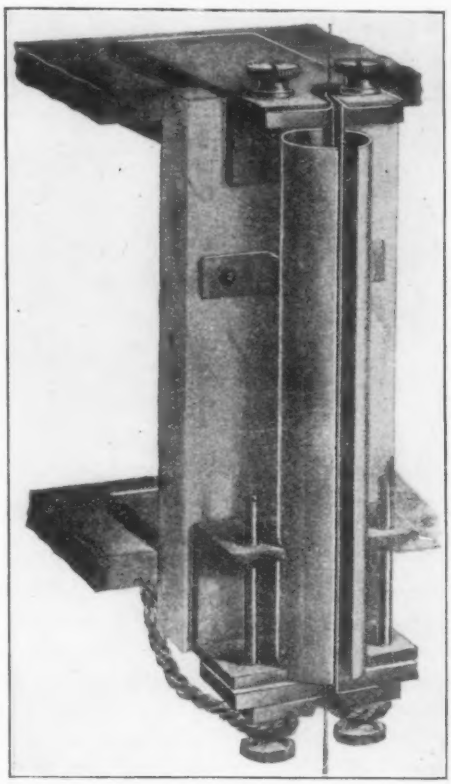


FIG. 7.

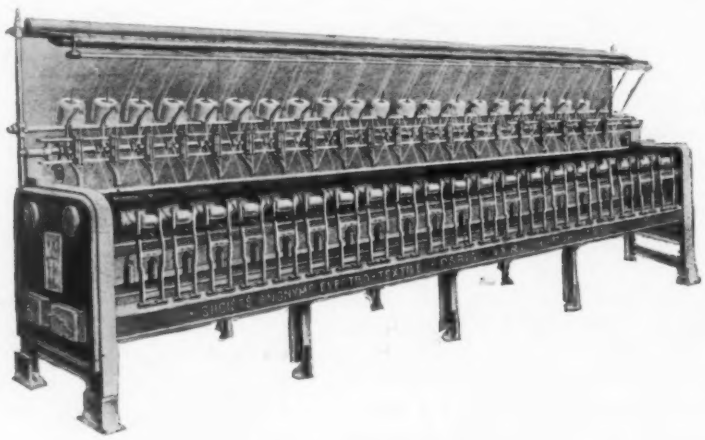
smell. Considerable risk of fire and explosion is caused by the arrangement of the gassing rooms, thus entailing incessant supervision. The combustion of such large volumes of gas makes the rooms unbearably hot, and is attended with the liberation of highly injurious quantities of carbon monoxide and carbon dioxide, which can only be remedied by a complicated system of ventilation, with an extensive series of pipes and considerable outlay on motive power for the fans, etc. It is well known that operators in gassing rooms are liable to gradual poison-

ing by carbon monoxide, the malady being manifested by frequent headaches and progressive anaemia.

The researches of Dr. C. Riviere have shown that in spite of all ventilation the air of gassing rooms invariably contains more than the permissible maximum of carbon monoxide; and in this connection we cannot do better than reproduce an extract from the report published by Dr. Riviere in 1906.

"Until recently no special ventilation was provided in gassing rooms, but at the present time they are well ventilated. On December 2, 1905, however, the writer had occasion to take a sample of air which was highly contaminated with carbon monoxide. Owing to the very cold weather the operators in the gassing room had slipped off the fan belt, so that no air being drawn off, the air intakes no longer acted, and the room was consequently in a very unhealthy condition. About 500 gas jets were burning, each jet having 5, 8, or 14 small holes in order to obtain a corresponding number of tiny gas flames, so that there were in all about 4,500 small flames, of low illuminating power (the mixture of gas and air not being always properly adjusted). Some of them, however, which were stopped up when the gas was lighted, afterwards reopened under the pressure of the gas from inside the pipes, but did not in all cases light up from the adjoining flames, and therefore constituted sources of injurious gas. A sample drawn from this air towards the end of the morning of December 2, 1905—that is to say, at a time when the quantity of carbon monoxide would be at the maximum—furnished on analysis 1/12500 of carbon monoxide.

"The second experiment was performed in a well-ventilated gassing room, the air being drawn in by means of a fan through intakes debouching under the machine, so that the operators scarcely felt any draught. An hour after the starting of the machines, the air of the room contained 1 part of carbon monoxide in 150,000 of air. Towards the end of the day the air of the same room contained 1 part of carbon monoxide in 33,000.



THE ELECTRIC SINGEING MACHINE.

"In another works two samples of air, taken at different times, contained respectively 1 part of carbon monoxide in 20,000 and 1 part in 21,000. The analysis in the first case was performed by Professor Buisine, of Lille, and in the other by Professors Gerard and Surmont ('Echo Medical duNord,' July 12, 1903, p. 306). With better ventilation the ration of carbon monoxide fell to 1 part in 50,000.

"In electric singeing not only is a more complete utilization of heat effected, but at the same time only a small quantity of heat escapes into the room, and there is no injurious gas produced apart from the carbon dioxide resulting from the combustion of the projecting fibers. Yarns singed by electricity are only slightly discolored, the smell

is less decided, and the shade is uniform. Finally, the small fibers and down are cleanly and completely eliminated. Dyed yarns can be singed without affecting their color, most satisfactory results being obtained.

"It is interesting to note that the temperature of the singeing tubes in electric singeing machines can be varied by almost imperceptible degrees, and adapted with great accuracy to the number of the yarn under treatment and the rate of unwinding. It is evident that this perfect control is impossible when gas is used.

To recapitulate: The substitution of electricity for gas effects an average of 50 per cent. To make these results complete it is desirable to obtain comparative figures giving the annual expense in two gassing works employing gas and electricity respectively. By this means the advantages of electricity could be expressed in figures, especially as regards the high speed practicable with safety in the case of electric machines.

It may be added that the process is equally applicable to the singeing of other textile fibers, and more particularly to schappe silk.

Yarn Number.	Rate of Winding.		Weight of Yarn Gassed per Head per Diem.		Consumption per Kilo. of Yarn.		Cost per Kilo. of Yarn.		Remarks.
	Gas. Metres.	Electricity Metres.	Gas. Kilos.	Electricity Kilos.	Gas. Litres.	Electricity Watt Hours.	Gas. Francs.	Electricity Francs.	
33	180	400	3·150	7·0	176	113	0.029	0.009	
50	240	400	2·700	4·50	205	150	0.030	0.012	
60	240	400	2·700	3·840	241	184	0.036	0.015	
100	320	400	1·920	2·40	290	220	0.043	0.017	
127	370	400	1·740	1·88	320	250	0.048	0.020	
127	247	400	1·170	1·900	374	280	0.056	0.022	
144	256	400	1·165	1·620	409	320	0.061	0.025	
169	298	400	1·060	1·380	412	350	0.061	0.028	
186	325	400	1·050	1·260	416	370	0.062	0.030	
203	325	400	1·960	1·100	438	395	0.063	0.032	
211	350	400	0·995	1·140	437	420	0.063	0.033	
220	350	400	0·055	1·090	448	450	0.065	0.035	

"Careful tests have been performed, extending for more than six months, in order to obtain a full acquaintance with the working of the electric burners. These tests were carried out at the Hellemmes doubling works with a very large series of yarns of different numbers, twist, and origin. The results show that the process is more economical in proportion as the speed of winding is increased. A speed of 440 yds. (hitherto) is generally employed, as often as the tension of the yarn permits."

The first table gives a comparison of the results obtained by treating various cotton yarns by gas and electricity. From these data the expense of working the two systems, gas and electricity, in the case of a 100-head machine works out as shown in the second table.

A NEW COTTON SOFTENER.

The Globe Cotton Softener is the name of a new product being placed on the market by the Corn Products Refining Co. of New York. It is the result of careful study and practical mill tests to produce a product with all the good qualities of tallow as softener and lubricant in the sizing and finishing of both yarns and fabrics and at the same time overcome all objectionable properties of tallow for that purpose.

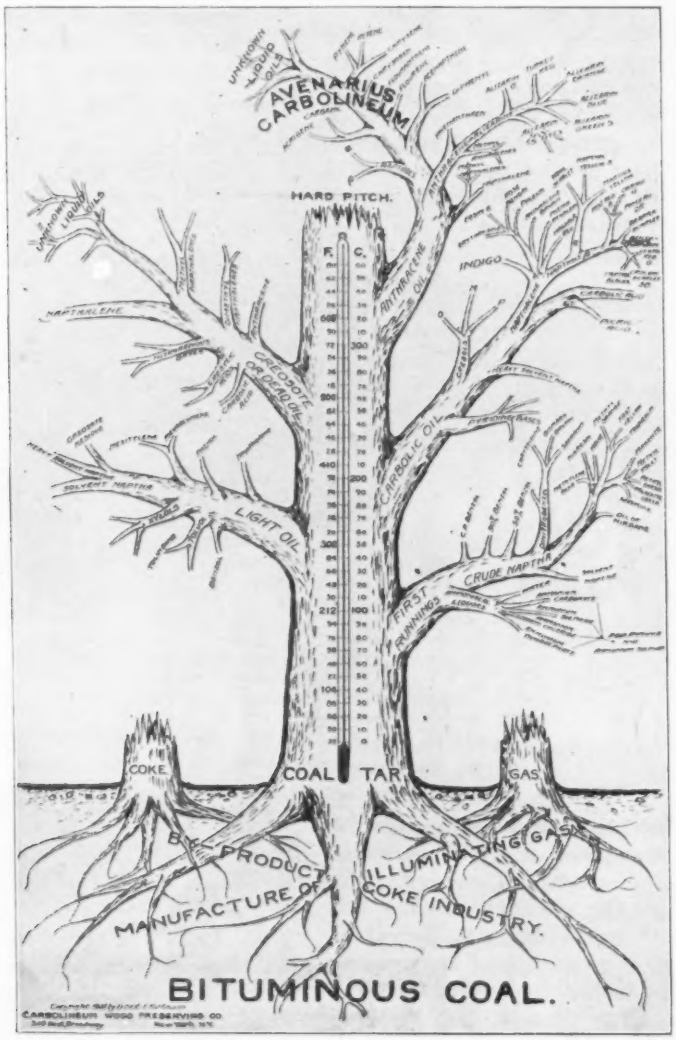
It is a pure soluble vegetable product made from vegetable oil and is more economical than tallow, one barrel of the Globe softener producing the same results as one and one-third barrels of tallow. It runs uniformly and any two lots can be depended upon to produce the same results. It is per-

fectly soluble, mixing instantly with starch and water, whether hot or cold. It does not precipitate but maintains an even solution.

Cotton manufacturers are giving more and more attention to the finish of the goods. There is no one point that can do more to make or mar the fabric. The best spun yarn and best woven cloth will not attract the buyer unless the perfect structure of the fabric is brought out and enhanced by an attractive finish and proper "feel."

COAL TAR.

The order in which various coal tar products are derived from the original coal tar is shown in the accompanying diagram which has been arranged in the form of a family tree with the trunk representing coal tar, and the branches the various derivatives. The thermometer applies only to the boiling ranges in the first distillation of the tar. The boiling points of the individual products shown in the branches cannot be inferred from their height relative to the thermometer.



This illustration is supplied by the Carbolineum Wood Preserving Co., 349 West Broadway, New York. They will mail original photographs of the drawing on application.

Dyeing, Bleaching, Printing, Etc.

THE TREATMENT OF WASTE DYE LIQUORS.

BY WM. McD. MACKEY.

(In Jour. Soc. of Dyers and Colorists.)

In the method of treating waste dye effluent herein described there is no new departure on the chemical side, but before going on to a description of the process and plant that is now at work at Batley, some of the general questions involved in the treatment of trade effluents will be dealt with, and the results of some laboratory experiments that have been recently made on methods of precipitation will be given.

Perhaps the most obvious characteristic of an effluent that may be considered suitable for turning into a stream is that it should be slightly alkaline, and the most natural form that the alkalinity could take would be carbonate of lime. An alkaline effluent that is free from suspended matter is not likely to give any further deposit when it enters a stream or river which is itself alkaline, while an effluent that is acid, or even neutral, may give a deposit when it mingles with a natural water. Some of the becks in this neighborhood are usually acid owing to the discharge of waste seak liquor. But sooner or later an acid effluent that holds in solution solids precipitable when the effluent becomes alkaline, will meet a natural alkaline water and be the occasion of more or less nuisance.

Another point of equal importance is that the treated effluent should not contain easily putrescible organic matter. The organic contamination is usually measured by the oxygen absorbed. Hence of any two methods of purifying, that which gives the less figure for oxygen absorbed in the treated effluent is obviously the better.

A good test for judging of the condition of streams is the amount of the free oxygen or air in solution. If a stream contains anything approaching saturation, 6.7 ounces per cubic foot, it may be regarded as being in a healthy condition and capable of dealing with any moderate amount of contamination as far as readily oxidizable organic matter goes. On the contrary, if a stream is devoid of dissolved oxygen it is, so to speak, dead. It is likely to be so highly charged with organic matter that it is incapable of oxidizing until it has been aerated or mingles with other water that is aerated.

The well-known methods of determining the dissolved oxygen are not satisfactory in judging effluents, on account of the difficulty of preserving a sample entirely free from air even after it is bottled and the rapid change that takes place in the sample, especially if it be loaded with organic matter, resulting in the diminution of the oxygen left in solution.

What is wanted is a simple process that could be used on the spot and which would give a figure, even if empirical, which might be recorded as showing the state of the stream at different places, and under different conditions.

In the case of the treatment of waste dye liquor, besides the alkalinity (or at least absence of acidity) and the absence of suspended matter and readily oxidizable organic matter, there is the question of color, and that of the presence of poisonous metals or metallic salts. These latter, on account of the state of extreme dilution in which they occur, and also the comparative rarity of their occurrence, have not been the occasion so far of serious difficulty, at least in my experience.

With regard to color, in the case of the local streams such as the Batley Beck and, say, the Aire below Baildon Bridge, the authorities have not unduly pressed for a colorless effluent, though of course that is preferred, and we may be sure that as the streams improve owing to the efforts of the manufacturers to purify their effluents, the color will be more stringently dealt with.

This brings us to a difficulty that is always present to a manufacturer when he is at-

tempting to satisfy the authorities in the matter of purifying his effluent.

The manufacturer naturally wants finality —that the process he adopts with the consent of the authorities and the measure of purification he attains shall be accepted finally, and that beyond an inspection to see that the standard thus set up be maintained the manufacturer should have the worry of pollution at last off his shoulders.

On the other hand, looking at the question from the point of view of the authorities, it can readily be seen that though they may give a tentative approval to a process they cannot bind the authorities for a lengthened period.

It is impossible to fix a hard and fast standard applicable to all rivers and streams. What would pollute the upper reaches of the Aire might be a positive purifier lower down.

At one time I took this view in a case of pollution in which I gave evidence for the defence. The offending effluent even on my own showing was certainly not faultless, but it was better than the stream, and I argued —it was rather an argument than evidence —that to pollute, a liquid must be worse than the stream it enters. The bench did not take this view, and I confess on reflection I think rightly, as, if this view obtained in all cases the authorities having the oversight of the streams would be powerless.

Further, with regard to the position of the authorities as to finality in the matter of the degree of purification, the personnel of the board will in the nature of things change, and the members at any given time are chary of binding their successors indefinitely, even if they had the power to do so. Besides there is always the probable effect of future legislation.

One point in the manufacturer's favor is that there is no process which is not capable of improvement, and which will not be improved and rendered more suitable to the existing circumstances if it is intelligently handled. The authorities may reasonably insist that the manufacturer shall purify his effluent, having regard to his facilities for doing so, the cost, and the condition of the stream; the manufacturer can as reasonably expect that having met the official requirements for the time being he shall not be unduly hampered by counsels of perfection.

At the present time, then, the question of purification practically resolves itself into one of precipitating the bulk of the organic matter and turning the effluent into the stream free from suspended matter and in such a state that it is not liable to give any further precipitate.

In the matter of color the manufacturer, in order to improve his effluent as regards organic matter and solids, has often been led to use the artificial dyes instead of the dyeing processes formerly in vogue; and thereby the color of the streams has suffered, as waste liquors from aniline dyeing are as a rule not so amenable to simple treatment resulting in a colorless effluent as the liquors from the older processes in which dyewoods were used.

In stating the results of the few laboratory experiments I have made on the method of using two of the most common precipitants I have not inquired into the dyeing processes of which they are the result. I have simply taken the samples, or taken what was given to me. The experiments were not made with a view to a paper, but to see how lime treatment compared with treatment by lime and alumino ferric, and where alumino ferric was used what was the better method of adding it—before or after the lime. Alumino ferric has of course been chosen because it is one of the best known precipitants containing alumina.

My own opinion, as the result of many experiments on effluents from the Batley district, is that careful treatment with lime alone gives a good effluent suitable when properly clarified for turning into the stream; and further that if alumino ferric were used it was better added before than after the lime. As to the latter point it seems, so far as the Batley experiments are concerned, that it does not matter much how the alumino ferric is added.

In all the experiments where alumino ferric was used it was at the rate of two pounds per 1,000 gallons (10,000 lbs.). The different experiments were made after the effluent had been raised to 130° F.

No. 1.—Dock Ing Mill Average over Day, 7th October, 1908.

	Parts per 100,000		
	Total Solids	Oxygen absorbed	Alkalinity in terms of Lime (CaO)
Untreated, filtered (through filter paper)	260	17.	acid 50 (=CaO)
Lime	276	4.68	0.84
Alumino ferric, then lime	288.8	4.40	1.68
Lime, then alumino ferric	290.8	4.70	2.24

No. 2.—Dock Ing Mill Average over One Day, 8th October, 1908.

	Parts per 100,000		
	Total Solids	Oxygen absorbed	Alkalinity in terms of Lime (CaO)
Untreated, filtered (through filter paper)	193.6	16.8	acid 41.1 (=CaO)
Lime	211.2	4.80	10.0
Alumino ferric, then lime	247.2	4.80	18.4
Lime, then alumino ferric	238.4	4.72	17.9
Alumino ferric only	218.4	17.8	acid 45.6 (=CaO)
Previous precipitate	206.8	8.1	acid 22.4 CaO

No. 3.—Cotton Dyehouse.

	Parts per 100,000		
	Total Solids	Oxygen absorbed	Alkalinity in terms of Lime (CaO)
Untreated, filtered (through filter paper)	204.4	7.24	acid 14 (=CaO)
Lime	277.2	4.24	17.9
Alumino ferric, then Lime	274.0	2.44	10.0
Lime, then Alumino ferric	279.6	3.28	9.52
Alumino ferric only	212.0	4.36	acid 16.8 (=CaO)

No. 4.—Woolen Dyehouse.

	Parts per 100,000		
	Total Solids	Oxygen absorbed	Alkalinity in terms of Lime (CaO).
Untreated filtered (through filter paper)	212.4	4.96	66.7 (Na_2CO_3)
Lime	193.6	4.36	14.5
Alumino ferric, then lime	194.0	3.96	6.7
Lime, then alumino ferric	193.2	4.16	5.6
Alumino ferric alone	224.0	4.04	53.0 (Na_2CO_3)

From these it is evident that in the case of the Batley effluents lime is as efficient as lime and alumino ferric; the addition of alumino ferric gave no better results as regards color. In the majority of effluents examined from the Batley district lime gave a colorless or almost colorless effluent. In these particular cases the effluent was in each case of pale blue cast.

Only in the case of set No. 1 was the excess of lime kept at what would be aimed at in practice. The excess of lime if kept within bounds need not be regarded as objectionable. A quarter of a pound per thousand gallons (10,000 lbs.) gives 2.5 parts per 100,000, or, reckoned as temporary hardness (carbonate of lime), 4.5 parts per 100,000. There is always the question of the admission of free lime even in small quantity into a stream. No doubt in a trout stream it would be fatal, but the Batley Beck is not a trout stream. If it did become a matter of moment, it would be practicable to carbonate it, say by drawing some of the waste gases from the boiler fires, or the products of combustion from a small coke stove, through the effluent.

No. 3 is from cotton dyeing; No. 4 from woolen. In the case of the effluent from the cotton dyeing, alumino ferric followed by lime gave the best result, both as regards degree of purification and color.

In the case of No. 4 (from woolen dyeing) there was little difference in the result of the three methods of treatment.

Coming now to the question of precipitants in general, we are bound largely by price. How thoroughly this confines one is very aggravating to the chemist, to whom the process rather than the price appeals in the first instance.

The following table gives a comparative price per pound of the common or likely precipitants.

	Per pound.
Lime	$ .0017
Alumino ferric	.0058
Sodium Carbonate	.0118
Sodium Hydrate	.0230
Barium Hydrate	.0214

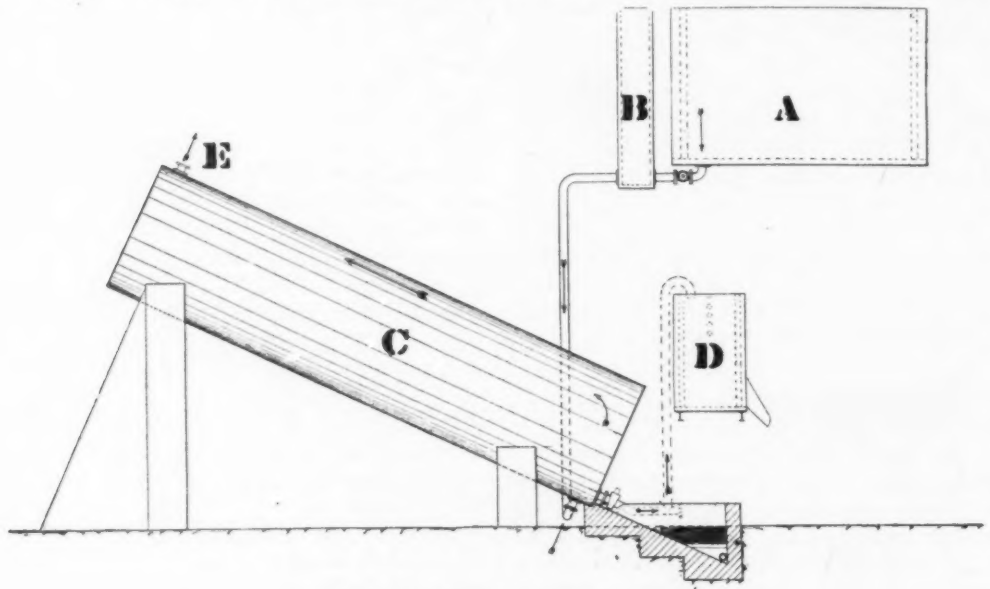
Lime is easily the cheapest. Next comes alumino ferric, and anyone who wishes to keep his chemicals about 2 cents per thousand gallons (10,000 lbs.) is confined to these.

Sodic hydrate and soda ash do not give good results so far as my experience goes, though possibly they might give good results in conjunction with other chemicals. There is a possible limited use for effluent treated with soda in dyeing, say, dark colors or in the boilers, but if water can be had at, say, 12 cents per 1,000 gallons (10,000 lbs.) it becomes a nice question whether the treated effluent is worth using or not.

Substances of the nature of China clay I have found impracticable. Whether they give any degree of purification or not they remain obstinately in suspension.

A chemical that one would like to use were it cheap enough is barium hydrate. It would not, when the acidity was due to sulphuric acid, as it usually is, increase the total solids as lime does. It must be remembered, though, that the atomic weight of barium hydrate is very high compared with that of lime, and consequently much more has to be added to do the same work. Thus I found that 5.1 pounds of lime per 1,000 gallons (10,000 lbs.) neutralized an effluent that required 31.5 pounds barium hydrate.

One possible objection to lime is that it seriously increases the total solids and the hardness of the effluent, and the increase is usually more when alumino ferric is used in conjunction (see tables). When the amount of effluent is large compared with the stream, and especially when the stream water is drawn off immediately below the point of discharge for boiler or manufacturing purposes the question assumes importance. In treating effluents from three to three and a half pounds lime per 1,000 gallons (10,000 lbs.) is a usual amount. Assuming for the moment that all the lime is used up for neutralizing acid in the effluent, and passes into the stream, it would create hardness (stated in terms of carbonate of lime) of 53 to 63 parts per 100,000. This is not higher than many natural waters. Effluents from "stripping" are usually responsible when much lime is required, and hence the amount of acid used in this way should, if possible, be kept low. If it were, any serious objection that can be raised to the use of lime would be removed. The soap test for the determination of hardness or rather the



APPARATUS FOR TREATING WASTE DYE LIQUORS.

determination of the lime present is not reliable.

Referring to the illustration, A is the averaging tank, holding in this case about 18,000 gallons (180,000 lbs. water). Into this tank the effluent is pumped and the proportion of lime added as a milk. The best results are obtained when the effluent is acid to start with, therefore it is preferable to add the lime after averaging and not before, as the bulk of the effluent is usually sufficiently acid to neutralize the occasional addition of alkaline liquor.

B is the pressure brake. The delivery pipe from the averaging tank, on which is the valve regulating the flow, is smaller than the outflow pipe from the pressure brake. The head of liquor cannot get below the level of the outflow, E, from the sloping tank, C, but may rise to whatever height in the box that is necessary to insure the flow through the plant. If the averaging tank were on the ground level the effluent would be pumped direct into the pressure brake.

Flowing down the pipe the effluent passes into the sloping tank, C. In the introduction of the sloping tank is the main novel feature of the process patented, and it was this part of the process that I was anxious to demonstrate on a practical scale at Batley.

All processes result in a precipitate of a more or less slimy nature, and the clarifying of the effluent from the precipitate, either by filtering or subsidence, is the problem always met with. It is here met by a filter process, but the novel feature is the way in which the old precipitate is made to act as filtering medium for the fresh.

The sloping tank insures that the precipitate gravitates and tends to settle at the lowest level, where the effluent, containing the fresh precipitate after addition of lime, enters.

The old precipitate, which has had time to agglomerate or become curdy, fixes the fresh precipitate entering, partly by acting as a filter, partly by clinging to what rises with the current of liquor, thus bringing the fresh precipitate down, to act in its turn as a fixer for subsequent precipitate. The liquor passes out in a well clarified condition.

If the tank were upright with the outlet at the top the current of effluent would make straight for it, carrying precipitate with it. But in the form of tank as described it follows the course of the arrows; that is, it runs along the upper slope of the tank towards the outlet, and this facilitates the dropping of any precipitate that has risen with it.

The capacity of this particular tank is about 8,000 gallons (80,000 lbs.), and the normal flow through it is about 3,000 gallons (30,000 lbs.) per hour. Through a tank this size the rate can be considerably more—up to 5,000 gallons (50,000 lbs.) and even higher—but a good result cannot be depended on at this rate.

It is not necessary to clean the sloping tank out, but it must be sludged at intervals, depending on the amount of sludge made. At Batley twice a week is found often enough, and it is important that some sludge be left in at the end of each sludging. At present the sludge is run on to a filter bed of the usual type.

The tank, D, with the pipe leading to it shown in short lines, is not in use yet. It is a method I propose of sludging into a raised tank from which the clear effluent left on subsidence of the solids can be drained off from different levels, and the thick sludge or solids either run direct into a cart or on to a raised filter bed from which it can be readily scraped. The liquid going through the filter bed can be run back to the sump, thus insuring that if it is not clear it does not enter the stream. The raising of the level of the filter bed allows this, and further the bed need not be so efficient as at present, seeing that the filtrate from it finds its way back into the sump.

There is a filter in use not shown on this plan. It is merely an upright tank of about 3,000 gallons (30,000 lbs.) capacity, with a false perforated top and bottom and filled between with coke breeze, through which the effluent passes upwards, being led from the top of the filter direct to the stream; or rather it was, for at Dock Ing it now returns to the mill for condensing purposes. The upright filter is simply a safeguard.

THE IDENTIFICATION OF THE COMMERCIAL TEXTILE FIBRES.

BY LOUIS J. MATOS, Chemical Engineer.

While many chemists have for a long time endeavored to supply to the practical worker a comprehensive scheme for the systematic identification of the textile fibres when examined singly or in combination with others, the fact remains that the only positive means of ascertaining the origin of any fibre is by means of the microscope.

Although there are many chemical tests available, it requires long experience and a

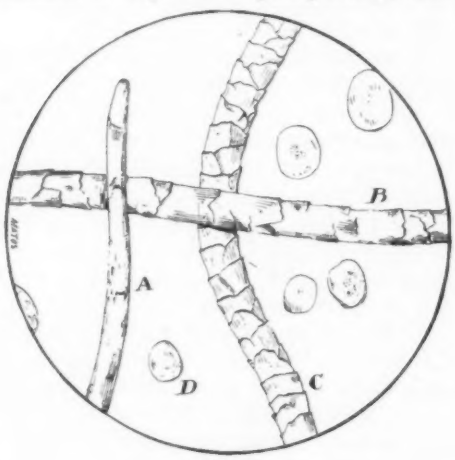


FIG. 1.

very careful observation on the part of the operator before he can make use of them to his own satisfaction and at the same time venture an opinion that will be of value to those desiring the information. On the other hand only he who has made a more or less critical study of the microscopical structure, and who is familiar with micro-chemical reactions of textile fibres, is capable of giving positive opinions regarding the kind of material under examination.

Many persons who are not directly familiar with the conditions of textile fibre examination, are of the opinion that all one has to do is to place a piece of goods or yarn under a microscope, and presto, the component fibres stand out in bold relief, and have only to be noted on paper. Nothing is further from the actual facts. Take for example the examination of a piece of ordinary cotton and wool mixed goods under the microscope. What do we observe? Only a meaningless tangle of fibres, the nature of which can only be conjectured; but if we ravel a small portion of the same goods, and further untwist and examine the threads of which it is composed, we will secure information of a positive character. In examining wool microscopically a combination of lenses giving an enlargement up to 250 diameters will be found ample, as with this all the important peculiarities of fibres may be plainly seen.

It is well known that wool, if boiled in a 10 per cent. solution of caustic potash or soda, is dissolved, and that cotton, if present, will remain unaffected, but this test sheds no light upon the supposition that the wool might have been partially "cow hair," or some other fibre of animal origin, and this is a matter very frequently of great importance to manufacturers. The reverse of this proposition applies with equal force, if it is desired to know whether the admixed vegetable fibre was all cotton or not.

There are so many conditions that frequently arise in the examination of textiles, that it is impossible to outline them in the present portion of this article, deeming it best to refer to them as they arise.

THE MICROSCOPE.

No textile fibre work of any kind can be done without a microscope and its accesories. The particular instrument to purchase will depend upon how far it is proposed to go into the work, and the use to be made of the results. If the work is in the interest of a mill, then the best equipment is none too good, but this does not imply that the cost will be high. A suitable microscope for fibre work, including a 1 inch and a 2-inch eyepiece, and a 3/4 inch and a 1/4 inch objective, can be procured for about $75.00, and an additional outlay of $20.00 to $25.00 will cover all other "necessaries."

Of course, in the hands of one who has never had experience in the handling of delicate instruments, and especially microscope objectives, very uncertain results will be obtained, so that practical instruction in its use should be obtained before attempting work.

THE ANIMAL FIBRES.

The commercial textile fibres of animal origin vary widely in number and character, but for our purposes they may be grouped into three classes, viz.: Wool, hair and fur, each of which differs from the others only slightly, the distinction being rather of degree than of kind.

If we regard the fibre from the highest grade of sheep as the true type of wool, possessing the well defined scales that impart to it the familiar felting qualities, and make comparative examinations of various kinds of

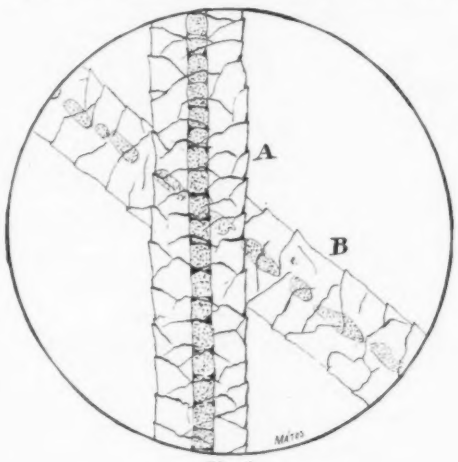


FIG. 2.

animal fibres including the low grades of wool, we will find that a gradual change has occurred, that the fibres have imperceptibly lost their elasticity, and also the marked character of the scales, impressing upon us that there is no line of demarcation between a wool fibre per se and a fibre from an animal other than a sheep.

An important characteristic of high grade wool is the elasticity of its fibre, its fineness, length, and waviness, while all these qualities diminish in proportion as the wool character is gradually merged into that of hair; that is, as the fibre becomes coarser, straighter, etc.; though the feature of length is not quite so marked, there being a few notable exceptions, one of which is the mohair fibre.

In order to make the several characteristics of wool plain to the reader, reference is made to the accompanying illustrations of drawings of fibres as seen under the microscope, Figs. 1 to 4.

Fig. 1 shows three fibres, two of which, B and C, have the most marked characteristic of wool, namely, the imbricated scales. That portion of the fibre marked A is the point of a natural fibre and shows the rounded end. By comparing these drawings it will be noticed that that part of the fibre nearest the tip does not show to any extent the scales that are seen in other parts of the same fibre. In this same drawing are also seen several cross sections of wool fibres, and one important characteristic is that in very few instances are they found perfectly round, while they are usually oval and sometimes quite irregular. The specimens of wool from which this drawing was made were from a fine Australian fleece, and is typical of a good grade of clothing wool.

In Fig. 2 are shown two drawings of a Leicester wool which is a typical English wool, somewhat coarse in texture. One of the most important characteristics of this type of wool is that there is to be seen in nearly every fibre a central core termed a "medulla." Sometimes this core diminishes very much,

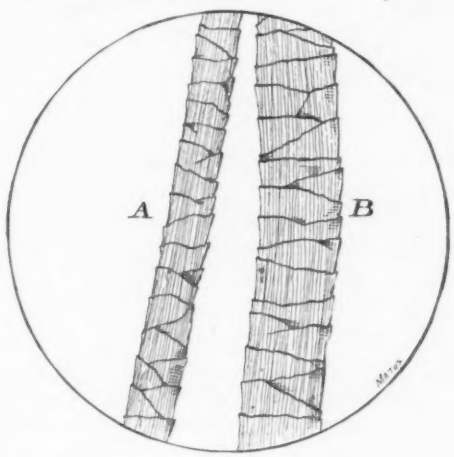


FIG. 3.

but traces of it are to be seen upon careful observation.

The fibre marked A in the illustration is well developed and perfect in every particular; the imbricated scales are sharp and well defined and the core is prominent. The fibre marked B has not reached the same development, the core is not continuous and the color cells are unconnected; their position, however, is decidedly marked. The mention of

the term "color-cells" brings before us the interesting fact that wools possessing them are more difficult to bleach than wools that do not have them, and this accounts for many instances where bleaching of some grades of wool has been an absolute failure.

A careful examination of fibre A in this illustration shows how the scales overlap each other, and where the apex of each protrudes to some extent.

Fig. 3 illustrates two fibres; that designated A being mohair; and one marked B, a typical

FIG. 4

fibre from the celebrated French Rambouillet sheep. These fibres are characteristic of two very important grades of wool, and are shown here in their relative proportion so far as their average diameter is concerned. The absence of the medulla is noticed.

WOOL SCALES AND FELTING.

The peculiar felting property of wool is dependent entirely upon the scales which cover the body of the wool fibre, without which felting would be impossible. The upper half of Fig. 4 is a diagrammatic representation of two typical wool fibres with their scales interlocked.

The better the grade of felt to be manufactured or of cloth to be fulled, the finer is the quality of wool to be selected. It is well known that fur, while possessing a rudimentary scaly covering, requires for the manufacture of hats a special chemical treatment with nitrate of mercury, so that the points of these scales may be forced away from the hair cylinder, thus enabling the dense hat body to be formed.

Special attention must always be given to the scouring of raw wool, for if the temperature is too high, the amount of alkali too great, or if caustic soda is present, there will always be danger of rounding the sharp edges of the scale. It is seen that the use of the microscope would play a very important part in examining fibres where damage in the scouring process is suspected.

The lower half of Fig. 4 shows several ultimate elements of a wool fibre, after it has digested for some time with hydrochloric acid. The long elements marked A are those found in the layers between the medulla and the outer layer of scales; those marked B are isolated scales and are characteristic; their shapes vary considerably, and are not typical of any particular class of wool fibres.

When raw wool is examined under the microscope, the dried suint, together with extraneous dirt of all kinds is at once seen.

DYEING BLACK ON TUSSAH SILK.

Tussah silk has a close twist, which makes it curl up easily, and, at the same time, is such a hindrance to penetration that it is very difficult to dye it a level black when treated like ordinary silk with cutch and logwood on the usual iron mordants. A fine black can be dyed very rapidly and simply on pure tussah, or tussah with not over fifteen per cent. of loading, by the following method: Three pounds of soda crystals are dissolved in 650 lbs. (78 gallons) of water in a wooden or copper beck. The silk is then entered and washed for half an hour at the boil. The liquid is then run off, and the goods are lifted. The beck is then supplied with the same amount of water as before, and when the water is boiling, soap is added in sufficient quantity to get a good lather, and in this the silk is worked for half an hour at the boil. When lifted the silk is cooled rapidly by hanging it up, and is then centrifuged. In the meantime 1 1/2 lbs. of Brilliant Green and 2 lbs. of Fast Red (Cassella) are dissolved separately and added to the soap bath through a very fine sieve.

The bath is then boiled up again to receive the silk, which is worked in it for twenty minutes. When the silk is lifted the bath is again boiled up, and the silk is re-entered and again worked for twenty minutes while the bath is cooling. The goods are then rinsed and brightened with dilute sulphuric acid: After rinsing and drying the silk is steamed on a stretching-frame to luster it. The above process gives a blue-black. If a deep black is wanted, the proportions between the dyes must be altered. The quantities will then be 2 1/4 lbs. of the Brilliant Green to 2 1/8 lbs. of Fast Red, and 1/2 lb. of Azo Yellow must also be added.

The weighting is done as follows: As soon as the silk has been degummed, it is centrifuged and placed in small bundles in a tin tetrachloride bath, marking 28° B. After one hour, lift, centrifuge, rinse thoroughly, centrifuge again, and then give a phosphate of soda bath of 5° B. for one hour at 50° C. Then lift, rinse, centrifuge, and dye in the old soap bath used for the degumming. A single tin-bath treatment loads the silk to about fifteen per cent. over par, but this loading can be increased considerably by repeating the action of the tin tetrachloride.—The Berlin Faerber Zeitung.

DYEING HORSE HAIR AND HAIR CLOTH.

Editor Textile World Record:

Please accept our thanks for the very able article "Dyeing of Horse Hair and Hair Cloth," by Dr. Louis J. Matos, which appeared in your January, 1909, issue. It solved a big problem for us. Frankfort.

DYE RECIPES.

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 33.

Brown on Cotton and Wool Union Cloth.

Duatol Brown R on 100 lbs. cotton and wool union cloth. Prepare the dye bath with

9 lbs Duatol Brown R.
(Cassella Color Co., 182 Front St., N. Y.)
25 lbs. Glauber's Salt.

Enter at a boil and work for 1/2 hour without any further heating Raise again to the boil and continue boiling for 1/2 hour. The bath should be kept as short as practicable.

Rinse in water, adding a little acetic acid to the last wash water if necessary.

The Duatol Colors are a new group of dyestuffs the principal advantage of which is that when being dyed in a bath containing Glauber's salt, the quality of the wool is not in the least affected. The method of application is simpler and quicker than the two-bath method and upon the whole this group of dyestuffs may be considered as an important mark of progress in the dyestuff industry.

Recipe No. 34.

Scarlet on Cotton Yarn.

Dianil Fast Scarlet R S on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Dianil Fast Scarlet R S.
(H. A. Metz & Co., 122 Hudson St., N. Y.)
15 lbs. Glauber's Salt.
1½ lbs. Soda Ash.

Dye at a boil for one hour.

Dianil Fast Scarlet R S is easily soluble and may be dyed in a short bath. It equalizes and exhausts well, and its fastness answers the usual requirements of a direct cotton color.

Recipe No. 35.

Blue on Cotton Yarn.

Kryogene Direct Blue 3 B on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Kryogene Direct Blue 3 B.
(Badische Co., 128 Duane St., N. Y.)
20 lbs. Sodium Sulphide.
5 lbs. Soda Ash.
60 lbs. Glauber's Salt.

Enter at 180° F., dye for one hour at a temperature just below a boil. It should be squeezed quickly upon removal from the dyebath and thoroughly rinsed.

Kyrogene Direct Blue 3 B possesses good fastness to light and washing and acids

Recipe No. 36.

Bordeaux Red on Cotton and Wool Union Material.

Duatol Bordeaux B on 100 lbs. cotton and wool union cloth. Prepare the dye bath with

8 lbs. Duatol Bordeaux B.
(Cassella Color Co., 182 Front St., N. Y.)
25 lbs. Glauber's Salt.

Enter at a boil and work for 1/2 hour without any further heating. Raise again to the boil and

continue boiling for 1/2 hour. The bath should be kept as short as practicable.

Rinse in water, adding a little acetic acid to the last wash water if necessary.

The Duatol Colors are a new group of dyestuffs the principal advantage of which is that when being dyed in a bath containing Glauber's salt, the quality of the wool is not in the least affected. The method of application is simpler and quicker than the two-bath method and upon the whole this group of dyestuffs may be considered as an important mark of progress in the dyestuff industry.

Recipe No. 37.

Orange on Worsted Yarn.

Fast Wool Orange R H on 100 lbs. worsted yarn. Prepare the dye bath with

1 lb. Fast Wool Orange R H.
(Read Holliday & Sons, 11 Gold St., N. Y.)
3 lbs. Sulphuric Acid.
15 lbs. Glauber's Salt.

Start the bath lukewarm and raise to a boil and continue boiling for one-half hour.

Fast wool Orange R H is particularly fast to light, washing, alkalies, etc.

Recipe No. 38.

Green on Cotton Yarn.

Katigen Deep Green 5 B Extra Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

7 lbs. Katigen Deep Green 5 B Ex. Conc.
(Farbenfabriken Co., 66 Lafayette St., N. Y.)
14 lbs. Sodium Sulphide.
6 lbs. Soda Ash.
60 lbs. Glauber's Salt.

Enter at 180° F. and dye at a temperature just below the boil for one hour, keeping the material below the surface of the liquor as much as possible. In second, and successive baths, the amount of dyestuff added may be greatly reduced.

Katigen Deep Green 5 B Ex. Conc. possesses very good fastness to alkalies and washing and good fastness to light and acid.

Recipe No. 39.

Bluish Green on Worsted Yarn.

Fast Green Bluish G S on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Fast Green Bluish G S.
(Farbenfabriken Co., 66 Lafayette St., N. Y.)
10 lbs. Glauber's Salt.
4 lbs. Sulphuric Acid.

Enter at 120° F. and dye at a boil for one hour.

Fast Green Bluish G S is satisfactorily fast to light for ordinary purposes, and it possesses good fastness to alkalies, steaming and rubbing. It dyes level and penetrates well.

Recipe No. 40.

Brown on Worsted Yarn.

Chrome Fast Brown B on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Chrome Fast Brown B.
(Berlin Aniline Wks., 213 Water St., N. Y.)
10 lbs. Glauber's Salt.
5 lbs. Acetic Acid.

Enter at 180° F. and raise slowly to a boil and dye at a boil for one hour. Then add

1 lb. Sulphuric Acid.

Boil for 1/2 hour longer. Finally add

1½ lbs. Potassium Bichromate,

and boil for 1/2 hour longer.

Chrome Fast Brown B possesses very good fastness to light and washing. It is quite sensitive to metals.

Recipe No. 41.

Blue on Cotton Yarn.

Tetrazo Blue R W on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Tetrazo Blue R W.
(American Dyewood Co., 154 William St., N. Y.)
25 lbs. Common Salt.
½ lb. Soda Ash.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Blue R W gives dyeings of average fastness, but when aftertreated with potassium bichromate or copper sulphate, the shades are made very fast to light and washing. It dyes cotton and wool about the same shade.

Recipe No. 42.

Scarlet on Cotton and Wool Union Cloth.

Duatol Scarlet G on 100 lbs. cotton and wool union cloth. Prepare the dye bath with

5 lbs. Duatol Scarlet G.
(Cassella Color Co., 182 Front St., N. Y.)
20 lbs. Glauber's Salt.

Enter at a boil and work for 1/2 hour without any further heating. Raise again to the boil and continue boiling for 1/2 hour. The bath should be kept as short as practicable.

Rinse in water, adding a little acetic acid to the last wash water if necessary.

The Duatol Colors are a new group of dyestuffs the principal advantage of which is that when being dyed in a bath containing Glauber's salt, the

quality of the wool is not in the least affected. The method of application is simpler and quicker than the two-bath method and upon the whole this group of dyestuffs may be considered as an important mark of progress in the dyestuff industry.

Recipe No. 43.

Violet on Worsted Yarn.

Anthra Chrome Violet R on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Anthra Chrome Violet R.
(C. Bischoff & Co., 451 Washington St., N. Y.)
5 lbs. Acetic Acid.
15 lbs. Glauber's Salt.

Enter at 120° F., bring slowly to a boil and dye at a boil until the bath is exhausted. Then after-treat for 1/2 hour at a boil in a separate bath containing

2 lbs. Potassium Bichromate.

Anthra Chrome Violet R is exceedingly fast to sunlight and fulling.

Recipe No. 44.

Scarlet on Cotton Yarn.

Dianil Fast Scarlet 4 B S on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Dianil Fast Scarlet 4 B S.
(H. A. Metz & Co., 122 Hudson St., N. Y.)
15 lbs. Glauber's Salt.
1½ lbs. Soda Ash.

Dye at a boil for one hour.

Dianil Fast Scarlet 4 B S is easily soluble and may be dyed in a short bath. It equalizes well and exhausts well and its fastness answers the usual requirements of a direct cotton color.

Recipe No. 45.

Red on Worsted Yarn.

Anthra Chrome Red A on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Anthra Chrome Red A.
(C. Bischoff & Co., 451 Washington St., N. Y.)
5 lbs. Acetic Acid.
15 lbs. Glauber's Salt.

Enter at 120° F., bring slowly to a boil and dye at a boil until the bath is exhausted. Then after-treat for 1/2 hour at a boil in a separate bath containing

2 lbs. Potassium Bichromate.

Anthra Chrome Red A is exceedingly fast to sunlight and fulling.

Recipe No. 46.

Brown on Worsted Yarn.

Chrome Fast Brown V on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Chrome Fast Brown V.
(Berlin Aniline Works, 213 Water St., N. Y.)
10 lbs. Glauber's Salt.
5 lbs. Acetic Acid.

Enter at 180° F., raise slowly to a boil and dye at a boil for one hour. Then add

1 lb. Sulphuric Acid.

Boil for 1/2 hour longer. Finally add

1½ lbs. Potassium Bichromate,

and boil for 1/2 hour longer.

Chrome Fast Brown V possesses very good fastness to light and washing. It is quite sensitive to metals.

Recipe No. 47.

Brown on Worsted Yarn.

Anthra Chrome Brown W G G on 100 lbs. worsted yarn. Prepare the dye bath with

¼ lb. Anthra Chrome Brown W G G.
(C. Bischoff & Co., 451 Washington St., N. Y.)
15 lbs. Glauber's Salt.
5 lbs. Acetic Acid.

Enter yarn at 140° F., dye at a boil for 1/2 hour, then add

1 lb. Sulphuric Acid

and boil for 1/2 hour longer. Then add

1 lb. Potassium Bichromate

and boil from 3/4 to 1 hour longer.

Anthra Chrome Brown W G G is exceedingly fast to sunlight even in light shades.

Recipe No. 48.

Blue on Cotton Yarn.

Kryogene Direct Blue 3 B Extra on 100 lbs. cotton yarn. Prepare the dye bath with

8 lbs. Kryogene Direct Blue 3 B Extra.
(Badische Co., 128 Duane St., N. Y.)
16 lbs. Sodium Sulphide.
5 lbs. Soda Ash.
60 lbs. Glauber's Salt.

Enter at 180° F., dye for one hour at a temperature just below the boil. It should be squeezed quickly upon removal from the dye bath and thoroughly rinsed.

Kryogene Direct Blue 3 B Extra possesses good fastness to light, washing and acids.

Mill News.

Those interested in receiving early and more complete investigated information of projected new mills, enlargements, improvements, fires facts and gossip of the trade are referred to the Textile Advance News, issued weekly by the publishers of the Textile World Record, at $15.00 per year.

COTTON.

New Mills.

*Alabama, Glencoe. Twenty acres of land have been offered for the proposed cotton mill, reported to be located here by outside parties who will invest $100,000 in the enterprise. If the project is carried to a successful conclusion, the company will be organized under the style of the Glencoe Cotton Mills, and will manufacture cotton yarns.

*Georgia, Forsyth. The Upson Mfg. Co., now located at Waynmanville, will remove its mill to this place, and operate as the Newton-Harp Mfg. Co. with capital stock of $35,000. A new mill will be erected and they expect to install machinery early in the summer. The equipment will be 3,000 spindles for manufacturing cotton yarns. Steam will be used for motive power at first, but it is probable electric power will be added later. An early report stated that the new mill would be operated as a branch of the mill at Waynmanville.

*Georgia, Manchester. On March 8 the Manchester Cotton Mills will award contract for the erection of their buildings, which was formerly dated for February 23. Particulars of this cotton mill have been given.

*Georgia, Summerville. It is reported that subscriptions amounting to $150,000 have been received toward the organization of the cotton mill recently reported as proposed. It is planned to erect brick and concrete structures capable of holding 10,000 spindles and 300 looms for manufacturing print cloths. Z. T. McKinney, of Greenville, S. C., and E. W. Studivant, of this place, are in charge of the enterprise.

*Massachusetts, Wilkinsonville. Two hundred looms comprise the equipment of the Army & Navy Cotton Duck Co., and are being operated on cotton duck. They buy all yarns. The capital stock is $200,000. George H. Meyer is president, Thomas W. Slocum is treasurer, Sam Hird is agent, and Fred Hird is superintendent. Mr. Meyer and Mr. Hird attend to the buying. A new dye house has been built and equipped for yarn and piece dyeing. The mill is operated by water power, electric drive. John H. Meyer Co., 75 Worth St., New York, are the selling agents.

*North Carolina, Durham. At the annual meeting of the Erwin Cotton Mills Co., the directors authorized the construction of the new 50,000 spindle mill, previously reported planned. Grey goods will be manufactured, about one-half the production being goods for converting purposes and the balance wide sheetings. Plans are now being considered by F. P. Sheldon & Sons, of Providence, Rhode Island, and as soon as ready will be given out for construction bids. They have not arrived at details except as are given above. A decision will be made shortly as to where the mill will be located, which will be either at West Durham, or Duke, the former being the home office of the company, and the latter the location of their No. 2 Mills.

*North Carolina, Hendersonville. The business men of Hendersonville have appointed a committee with W. A. Smith as chairman, to endeavor to secure the necessary subscriptions for the proposed cotton mill. D. D. Little, of Spartanburg, S. C.; Carroll Baldwin and S. J. Hallyburton, of New York City, have submitted a proposition, as reported previously, offering to invest $200,000, provided $75,000 is subscribed in Hendersonville.

*North Carolina, Laurinburg. Formal organization has been completed by the new Waverly Cotton Mill, J. P. McRae being elected president; J. A. Jones, vice president; C. F. Avinger, secretary and treasurer; and F. C. Graddick, superintendent. The mill will be located just beyond the Scotland Cotton Mills and as reported previously, will have from 18,000 to 20,000 spindles for manufacturing hosiery yarns. Construction work will be started about April 1.

North Carolina, Leaksville. The McAllister Co. has been incorporated with capital stock of $125,000 by T. G. McAllister of Fayetteville, N. C., E. A. Wiles of Greensboro, N. C., and C. N. Deshozo of this place. They intend to manufacture cotton yarn.

*North Carolina, Lenoir. The plant of the Moore Cotton Mill Co. has been completed. They have erected a one-story building 78 by 309 feet, and intalled 6,000 spindles for manufacturing cotton yarns. Details of this plant and company have been given previously.

*North Carolina, Selma. Construction work was started January 25 on a new mill for the Ethel Cotton Mills, formerly Selma Knitting Mills. The building will be completed in May or June, and will be equipped with 5,280 spindles for manufacturing hosiery yarns. The capital stock is $100,000. M. C. Winston is president, W. D. Anderson, secretary and treasurer. R. D. Beavers is superintendent of the knitting department. The improvements include the equipment of a dye house.

*North Carolina, Smithfield. B. B. Adams, W. M. Sanders, and others, are the incorporators of the Ivanhoe Mfg. Co., reported incorporated in our last issue. They intend to build a mill to be equipped with 5,000 spindles.

*Oklahoma, Poteau. The Poteau Cotton Mill Co. has been organized with capital stock of $100,000. W. A. Campbell of the National Bank of Poteau is president, and S. P. Clarke is treasurer.

*Texas, Fort Worth. It seems probable that a cotton mill will be erected here. Contract has been entered into between Fred H. White of Charlotte, N. C., and associates, and local parties for a new up-to-date mill to cost from $325,000 to $350,000, construction work to be started when the promised bonus of $50,000 is raised.

*South Carolina, Hartsville. New equipment referred to in reports given last October is being installed in the Hartsville Cotton Mills. The addition comprises 4,000 spindles.

Enlargements and Improvements.

Connecticut, Packerville. The Cutler Mills Co. has awarded contract for a lot of new looms.

Georgia, Columbus. It is reported that the Hamburger Cotton Mills will build an addition and install new machinery.

*Georgia, Griffin. It is reported that the Spalding Cotton Mills will practically double the present equipment of 12,000 ring spindles and 400 broad looms.

*Georgia, LaGrange. Contracts for building the new mill for the Unity Cotton Mills will be awarded on March 8 at the same time the contract for building the new Manchester Cotton Mills is awarded. Additional mill will be a two-story structure, 132 by 290 feet, and will be equipped with 10,000 spindles and accompanying machinery.

*Maine, Lewiston. The stockholders of the Hill Mfg. Co. has voted to build a new mill which will have a capacity of 23,000 spindles. Previous reports of this project have been given.

*Maryland, Dickeyville. Otto Goetz will occupy the present duck mill of the Ashland Mfg. Co., and will make cotton worsteds for Government purposes. The cotton machinery will be removed to the large mill in which woolen machinery was operated by W. A. Dickey, and this entire building will be fitted up with practically new cotton duck machinery. J. E. Tucker will have charge of this plant.

*Massachusetts, Fall River. Construction work on the Sagamore Mfg. Co.'s new Mill No. 3 is progressing rapidly.

*Massachusetts, Lowell. New machinery will be added to the Boott Mills, and a rearrangement of some of the old equipment will be made.

*Massachusetts, New Bedford. Plans of the Pierce Manufacturing Corporation in connection with the reported enlargement are for a building 150 by 165 feet to be added to the present weaving shed; increased floor space to be used for storage. This addition does not call for any increase in the power plant, or in any other department of the mill.

Massachusetts, Three Rivers. Lockwood, Greene & Co., mill architects and engineers, Boston, will draw plans for a new weave shed of sawtooth construction for the Palmer Mill of the Otis Co.

Massachusetts, Whitinsville. New drawing-in machinery will be installed in the Whitinsville Cotton Mills.

New Hampshire, Somersworth. Additions to the Great Falls Manufacturing Company include a new picker house, five stories high with basement, 80 by 100 feet, and an enlargement of the picker room in No. 8 Mill by a five story addition, 70 by 20 feet. In the former building carding machinery will be installed in addition to pickers.

New York, Oswego. The Standard Spinning Co. are making some improvements and will equip their entire plant with the Turbo-Humidifier system of air moistening, supplied by the G. M. Parks Co.

*North Carolina, Bessemer City. The power plant of the Proximity Mfg. Co. is being completed, and will be used to operate the heating and dye house equipment. It will consist of four 250 h. p. water tube boilers, fuel economizer, heater, two boiler feed pumps, one service pump, and two 1,000-gallon fire pumps. The Proximity Mill has recently been equipped with electric motors and electric current is supplied from the large power plant at the White Oak Cotton Mills, owned by the same company.

North Carolina, Chapel Hill. Julian S. Carr of Durham, N. C., has purchased the plant of Thomas F. Lloyd, known as the Alberta Cotton Mills, and the Blanch Hosiery Mills. It is reported that improvements will be made on both plants. Plans have not been completed.

*North Carolina, Concord. It is stated that a new dye house will be erected at once for the Locke Cotton Mills Co., which will be located in the rear of No. 4 mill, which was burned down several months ago.

*North Carolina, Concord. About April 1 the Lippard Mill, which is being equipped with 2,000 spindles by the Magnolia Mills Co., will be started up. 20s to 30s yarn will be spun.

*North Carolina, Greensboro. Work has been started on the erection of the proposed new bleachery and dye house for the Revolution Cotton Mills. Particulars of this enlargement have been given.

North Carolina, Kannapolis. It is reported that the Cannon Mfg. Co. will build an addition and install new looms. John W. Cannon of Concord, N. C., is president.

North Carolina, Kings Mountain. The directors of the Cora Cotton Mills are contemplating the erection of a new mill to provide additional equipment of 10,000 spindles.

*North Carolina, Monroe. It is stated that the directors of the Icemorlee Cotton Mills Co. have decided to build a new mill. They will duplicate the present capital stock of $125,000, and build and equip a 5,000-spindle plant for manufacturing fine yarns.

North Carolina, Mt. Holly. By May 1 the one story addition, 100 by 75 feet, under construction for the Woodlawn Manufacturing Company, will be equipped, and machinery in operation. Twenty-two new spinning frames for making 30s single and ply yarns in warps, skeins and on cones will be installed.

*North Carolina, Salisbury. One hundred and

twenty-eight feet will be added to No. 1 Mill of the Kesler Mfg. Co. and the present card room will be duplicated in order to stop running the card department at night. They will add thirty new cards. 26,000 ring spindles are operated, which furnish enough yarn to run looms day and night. They will move 10,000 spindles out of Mill No. 2, putting all the spindles on the same floor, and making space for more looms, which will be added later. In addition to the above, a picker room will be built, 40 by 100 feet. Yarns and sheetings are manufactured. J. W. Cannon of Concord, North Carolina, is president; C. E. Stevenson is secretary and treasurer, and John C. Mason is superintendent.

*North Carolina, Salisbury. Contract for the construction of the additional mill of the Kesler Mfg. Co. has been awarded to T. C. Thomson & Bros., Birmingham, Ala. The building will be two stories high, 80 by 120 feet, and will be equipped for manufacturing cotton yarns.

North Carolina, Wadesboro. It is reported that the Wadesboro Cotton Mills Co. will add about 1,000 ring spindles and preparatory machinery. About September, 1908, this company issued 75,000 in bonds to pay for improvements completed about that date.

Rhode Island, Warren. The new weave shed under construction for the Warren Mfg. Co. will be extended 100 feet longer than in the original plans. It will be 220 feet in length, and 45 feet in width.

Pennsylvania, Philadelphia. An addition, 58 by 86 feet, to cost in the neighborhood of $30,000 will be built to the plant of the Philadelphia Tapestry Mills, N. E. corner of Howard St. and Allegheny Ave. The addition will be five stories high.

Rhode Island, Ashton. It is rumored that the Lonsdale Co., which operates the Ashton Mills, has under contemplation the erection of a large addition to the local plant. Sheetings are manufactured.

*South Carolina, Easley. Construction work will be started on the large new mill for the Easley Cotton Mills about March 15, and the directors expect manufacturing will begin about September 15. Thirty-nine-inch print cloths will be manufactured. No financing will be needed for this enlargement, as the company has a surplus large enough to carry it.

South Carolina, Greenville. An extension will be built to the Woodside Cotton Mills to provide space for the proposed addition of 25,000 spindles and 700 looms. Construction work will be completed during October. Wide print cloths are manufactured. They advise that all machinery and supplies have been purchased. John T. Woodside is president of this concern, J. D. Woodside is treasurer, and M. O. Alexander is superintendent. The plant is operated by steam and electric power.

*South Carolina, Greenville. Contract for the construction of additional buildings for the Brandon Mills has been awarded, and contracts for machinery and supplies needed also have been given out. Enlargement will include a main structure four stories high, 123 by 300 feet, to be equipped with 25,000 spindles and 700 looms for the production of print cloth and converter's cloths.

*South Carolina, Inman. Work has been started on the enlargement to the Inman Mills.

South Carolina, Woodruff. It is rumored that the Woodruff Cotton Mill will build an addition during the summer. Lately provision was made to drive the plant by electric power. 37,000 ring spindles and 800 looms are operated on print cloths.

*Tennessee, Rockford. Plans for rebuilding the Rockford Cotton Mills, recently destroyed by fire, have been completed. The new building will be much larger than the old structure, and will be modern in every detail. Construction work will be completed as soon as possible.

Mills Starting Up.

Massachusetts, Newburyport. The Peabody Mfg. Co. will soon resume manufacturing. They make sheetings and shirtings.

South Carolina, Anderson. All the machinery in the Anderson Cotton Mills will be running when 19,000 spindles in Mill No. 1 are started during the next few days. This machinery has been idle since last April.

Tennessee, Newport. Manufacturing has been resumed in the Bellevue Cotton Mills and the style has been changed to the Willard Cotton Mill. The purchase of this property by W. O. Willard was reported some time ago.

Texas, Belton. It is announced that the Belton Cotton Mill, which has been closed for a number of months, will soon resume manufacturing in full.

WOOLEN.

New Mills.

Massachusetts, Boston. Ground will be broken at an early date for the large new building for the American Woolen Co.'s Fulton Worsted Mills. The addition will practically double the size of its spinning capacity. Another large mill is to be built in Lawrence. It will be 600 feet long, 125 feet wide, and six stories high, with a dye house 375 by 100 feet, also separate power house. This will be a separate mill and will be named the Ayer Mill in honor of Frederick Ayer, the first president of the American Woolen Company. Section D of the Wood Worsted Mills is being built to its full height, which will give an additional section 500 feet long, and 125 feet wide. Machinery is now arriving for this last addition. These enlargements are carrying out the recent decision of the directors to take the American Woolen Co. out of the market as buyers of worsted yarns.

*New Jersey, Garfield. Good progress has been made on the new mill under construction for the Forstmann-Huffmann Co. of Passaic. They expect to begin manufacturing about June.

Pennsylvania, Philadelphia. The Hancock Worsted Mill has begun manufacturing ladies' dress goods and men's wear on 20 looms at the N. E. corner of Lehigh Ave. and Mutter St. William Brodie is proprietor and James Stokes is manager.

Enlargements and Improvements.

*Connecticut, Thompsonville. Good progress is being made on the new mill under construction for the Upson-Martin Carpet Co. The foundation has been completed, and work on the walls is under way. The building will be of brick, three stories high, 150 by 50 feet. The company has awarded contract for 20 new Axminster looms to the George Bushnell Press Co. of this place, who will deliver them about April 1. Each loom will be operated by individual motor.

*Connecticut, Torrington. The new buildings of the Warrenton Woolen Co. have been completed, and machinery is being installed. Details of this enlargement have been given previously.

Connecticut, Yantic. Three new finishing machines have been installed in the Yantic Woolen Co.'s plant.

*Maine, Foxcroft. The new dye house for Mayo & Son., Inc., is now being used. Two new tubs for piece dyeing are being installed in the old dye house. Among other additions is a new gig.

Maine, Warren. Two 135 h. p. boilers will be installed in the George's River Mills during April.

Maryland, Oella. Additional looms are being installed by W. J. Dickey & Sons, Inc. The mill is running to its full capacity in all departments on kerseys, cassimeres, dress goods and suitings. A. J. Shaugnessey is superintendent.

*Massachusetts, Caryville. In about two weeks the addition to the dye house of the Taft Woolen Company will be completed. The mill is being operated in full.

Massachusetts, Fitchburg. The Star Worsted Co. has leased Pitt's Mill and will install 10 spinning frames, having 1,560 spindles, and 6 roving frames. The branch will be known as Pitt's Branch of the Star Worsted Co. They expect to begin manufacturing within a few weeks. C. B. Smith is treasurer of this company.

Massachusetts, Huntington. Ten new looms have been installed in the Huntington Manufacturing Co.'s plant, making 40 looms in all. Worsted suitings are manufactured.

*Massachusetts, Lowell. Contract for construction work on the new building for the Musketaquid Mills has been awarded. The building will be 60 by 70 feet, and five stories high. An additional story, 60 by 60 feet, will be built on the old mill. Construction work will be started in the spring. Previous reports have been given.

*Massachusetts, North Adams. Contract has been awarded by the Mayflower Worsted Mills for ten new looms, which will be set up as soon as possible.

Massachusetts, North Billerica. Extensive improvements are being made in the finishing department of the Faulkner Manufacturing Company. They are building a new dry finishing room, two stories high, of concrete construction, have installed a new press, two washers and two fulling mills of James Hunter make, and have ordered a Parks and Woolson double shear and wet brush. The mill is running full time and is very busy.

*Massachusetts, North Chelmsford. George C. Moore intended to erect a wooden building to replace the plant recently burned, but this plan has been abandoned, and a brick structure will be under construction within a short time.

*Massachusetts, North Chelmsford. Construction work is going forward on the new scouring mill being erected on the site of the old dye house of the Moore Spinning Co. The new mill is a one-story frame building, 200 by 40 feet. As reported previously, a new power plant will be erected, and new power equipment installed.

*New York, Jamestown. It is correct that the Ashworth & Odell Worsted Co. have purchased a tract of land 600 by 100 feet, but they have not started on plans for a building. They intend to begin construction work early in the summer, and at that time will be ready to announce necessary new equipment. They manufacture 2/15s to 2/40s worsted yarns on the Bradford system, operating 1,500 spindles.

New York, Syracuse. The Syracuse Rug Works will erect a brick addition, 36 by 85 ft., at a cost of $8,000. The building will be completed about May first.

New York, Yonkers. It is reported that plans have been completed for a new mill to be erected for Alexander Smith & Sons' Carpet Co., the new building to be five stories high of brick and stone construction, and will be completed as early as possible.

*Rhode Island, Providence. The last of the looms contracted for by the Elston Worsted Company have arrived, and are being set up. It is stated that James Haigh, who has been with the company's mill at Wallingford, Pa., will have charge of the weaving. The spinning department has been placed on a night and day schedule.

Rhode Island, Westerly. A new water wheel has been installed in the Pawcatuck Woolen Mills. During the changes it has been necessary to stop some of the machinery during the day time; but this was made up by night work.

Rhode Island, Wickford. A small addition, 32 by 16 feet, is being erected for the Premier Worsted Mills to provide space for skein winding and twisting machinery. This company manufactures fancy and plain worsteds on 40 looms, buying all worsted yarns. William H. Parr is president, superintendent and buyer, and Edwin C. Gammage is treasurer and agent.

Vermont, Bennington. It is reported that Holden, Leonard & Co. will replace one of their present buildings with a two-story structure combining their weaving department in the new building, also that 50 new looms will be added.

Virginia, Winchester. Within a few days contract will be awarded by the Winchester Woolen Mills, C. A. Williams & Bros., to double capacity of the plant. One set and 8 looms are operated on cheviots, cassimeres, and similar goods.

Mills Starting Up.

Delaware, Newcastle. On March 10 the Delaware Mills Co. will resume manufacturing after

an idleness of about ten months. Reports that the property has been sold to New York parties which have been circulated are incorrect.

*Massachusetts, Pittsfield. Manufacturing has been resumed by the S. N. & C. Russell Manufacturing Co. The changes in the officers of this concern were made necessary by the death of their president, Mr. F. W. Russell. The officers at present are as follows: Henry R. Russell, president and treasurer, Carey R. Kinney, assistant treasurer. There has been no reorganization.

*New York, Dryden. Particulars of the resumption of manufacturing in the Dryden Blanket Co.'s plant are as follows: The mill is now being operated by the company as an experiment, and if results are satisfactory it will be continued in operation. It will be necessary to carry on the work for about two months before it is finally decided what the permanent arrangement will be.

New York, Wegatchie. On March 1 the woolen mill of Curtis & Youland will resume manufacturing.

Mills Shutting Down.

Massachusetts, Worcester. The Southgate Woolen Company is going out of business, and the affairs of the company will be liquidated. Two sets and 42 looms were operated on cassimeres and satinets. The company has not failed and is solvent today, in fact, they have always made a reasonable profit. The corporation has been controlled by one family, some of whom are dead, and others in ill health, and for this reason, in connection with the fact that the manager, G. W. Davis, has other business interests, it was thought advisable to wind up the business. The mill will probably continue, and it is possible a stockholder of the mill will run it, starting before long. It is understood, however, that the property is for sale or lease to outside parties.

SILK.

New Mills.

*New Jersey, Paterson. Articles of incorporation have been filed by the Imperial Silk Co., recently incorporated with capital stock of $125,000, $36,000 paid in. They have leased the upper floor of the new Aronson mill on East 18th St. Abraham Moskowitz and Michael Germanski are the incorporators.

*New Jersey, Paterson. The Rigby Silk Co., recently reported incorporated with capital stock of $25,000, will manufacture broad silks. James Rigby is president and agent, and James Rigby, Jr., is treasurer. They are interested in necessary machinery and supplies.

*New York, New York City. The plant of the Morton Silk Weaving Co., reported incorporated in our last issue with capital stock of $50,000, will be located at 430-438 East 102d St., with an office at 3 East 17th St. They will operate 40 looms on broad silks for the cutting-up trade. Samuel Abrahams is president, David Cohen is treasurer and buyer, and F. W. Thomas is superintendent. The mill will be operated by steam power. They are interested in full equipment and supplies.

*Pennsylvania, Upland. The Chessauqua Silk Co., reported incorporated in January with capital stock of $200,000, expects to begin manufacturing in building known as No. 3 Crozier Mill about March 15.

*Virginia, Norfolk. The proposed silk mill for this city will be a branch of the W. H. Ashley Silk Co. of Hacketstown, Md. A building in Berkley ward has been leased, and equipment is now being installed. This company does silk throwing.

Enlargements and Improvements.

*Connecticut, New London. A. Lincoln Dean has been awarded contract for building dye house at Home and Hempstead Streets for the New London Wash Silk Co. The building will be 200 by 30 feet.

*Massachusetts, Holyoke. Improvements at the Goetz Silk Manufacturing Co.'s plant consist only of replacing old quillers with new ones. These are being supplied by the Allen Iron Works of North Adams, as reported previously. Samuel McQuaid is president, treasurer and buyer, and J. G. Simpson is superintendent.

Massachusetts, Taunton. The first delivery on an order of 126 new looms will be received by the Taunton River Mills within a few days. Some of these looms will be installed in the large weaving shed, while others will be set up on the first floor of the old mill building. Silk and silk and cotton dress goods are manufactured. P. H. Fenton is superintendent.

*Massachusetts, Taunton. Good progress is being made on installing the 126 new looms in the Taunton River Mills. They manufacture all silk goods instead of silk and cotton goods as reported previously.

*New Jersey, Phillipsburg. The two-story addition to the mill of the Continental Silk Mills at this place is approaching completion, and will be ready for the insfallation of machinery by March 15.

*Pennsylvania, Easton. One hundred new looms and 1,500 new spindles is the equipment proposed for the new two-story addition, 126 by 50 feet, under construction for the Eastern Silk Company. The building will be completed about March 15 and machinery will be set up immediately after that date. The capital stock is now $200,000. William R. Haytock is president, treasurer and buyer of raw stock; John Haytock is superintendent and buyer of supplies.

Pennsylvania, Mayfield. A new silk throwing mill will be erected here by The Alfred Harvey Silk Company. It will be 42 by 81 feet, two stories high, of wood construction. The plans call for an expenditure of $7,500.

*Pennsylvania, Mayfield. The addition under construction for the Alfred Harvey Silk Co. will be completed March 15, and when equipped will give employment to 100 additional operatives. They are interested in new equipment and supplies.

Rhode Island, Pawtucket. The plant of the Zephyr Textile Company, 34 East Ave., which has

been closed for some time, has been bought by Reiling & Schoen, 97 Greene St., New York, owners of the Penikees Mill, Valley Falls, R. I., and will be put in operation at once. Increase in business of the Penikees Mill is the reason for this enlargement. Silk and silk and worsted goods will be manufactured. The plant consists of 60 looms and will be operated as an annex to the Valley Falls plant.

Mills Starting Up.

New York, Corning. The local plant of the Merrill Silk Co. will resume manufacturing within a short time. C. B. Mosher is arranging for the resumption of manufacturing.

New York, Sidney. The Hartley Silk Mfg. Co. have bought the plant of the Sidney Silk Co. and will begin manufacturing in a few weeks. Thomas J. Warburton, superintendent of the Sidney Silk Co., will have charge of the plant for the new company. The plant has been shut down since October, 1908, on account of lack of capital, and the company failed to meet payments on the interest and a portion of the principal, of the bond issue. The plant consists of 106 looms.

MISCELLANEOUS.

New Mills.

*New Hampshire, East Jaffrey. In about one month the new Perkins-Webster corporation will begin manufacturing. Initial equipment will be two looms for weaving narrow fabrics, probably shoe strappings at first; but from this small beginning they expect to increase rapidly. The capital stock is $2,000. John Perkins is president, Wilbur E. Webster is treasurer and buyer, and Ralph C. Perkins is superintendent. They are interested in supplies, and a small steam engine.

New York, Lockport. J. Sidney Starling, secretary and treasurer of the Consolidated Cutlery Company, is interested with others in establishing a plant for the manufacture on a large scale of comforts, batting, wadding and similar articles. They will make a specialty of wadding and desire information as to necessary equipment.

*New York, North Tonowanda. The Ryder Mfg. Co., which was organized last September, has taken over the plant of the Niagara Cordage Co. and intends to start operations within a short time, when necessary repairs have been completed and other cordage machinery installed which has been contracted for. In the near future they also propose to install a hemp plant in addition to their hard fiber plant and will manufacture matting and other products from their steel fibrous yarns They will be in the market very soon for heavy looms to manufacture this matting and also weave and braid belting.

*Rhode Island, Providence. The Narrow Fabric Weaving Co. is the name of the new company which we have reported from time to time as contemplating establishing a plant at Westerly, R. I. Their attorney has an office at 48 Custom House St. in this city, and it is stated that the company, when organized, will have offices at that address. At present details of organization are being completed. It has not been definitely decided to locate at Westerly.

Rhode Island, Woonsocket. Picking and carding machinery is being installed in the old mill on Bernon St. formerly occupied by the Montrose Woolen Co. Carded cotton will be produced, and about six hands will be given employment.

Enlargements and Improvements.

*Connecticut, New Haven. The 60 by 200-foot addition to the Narrow Fabric Corporation's mill is nearing completion. The moving in of machinery will be started at once.

*Massachusetts, Milford. Six elastic web looms have been installed by William Lapworth & Sons Co. in addition to those added last September, making a total of 100 looms. It is said that the concern is unable to fill its orders on time, and that an addition will be built shortly to provide space for a largely increased equipment.

New Jersey, Lodi. A large addition is being erected to the plant of the Millbank Bleachery.

New Jersey, Jersey City. Owing to the extension of the business of the Eureka Fire Hose Co., and the necessity of carrying several months' supply of raw material on hand, they have begun the erection of a storehouse on the Arlington Ave. side of their plant. The building will be 74 ft. 8 in. by 50 ft. and 18 ft. high.

New Jersey, Paterson. Ground will shortly be broken for new mill on Graham Ave. for Prescott & Waywell. The building will be two stories high with basement, and will have floor space of about 6,000 feet. The cost will be in the neighborhood of $18,000. The company expects to employ about 120 hands in the new mill, which is about twice as many as are now employed. They do warping and quilling, also prepare warps for printing.

New Jersey, Paterson. A brick addition is to be erected for the Barbour Flax Spinning Co. at Spruce and Grand Sts., estimated to cost $7,000.

*New Jersey, West New York. Preparations are being made by the Novelty Web Co., 171 Wallabout St., Brooklyn, New York, to remove to the mill at 11th St. and Bergenline Ave., which was purchased by them some time ago. New looms will be added.

Rhode Island, Slatersville. New boilers are being installed in the Slatersville Finishing Co.

Rhode Island, Woonsocket. The Rhode Island Dyeing & Finishing Co., on South Main St., is to rebuild its present plant or to erect a new building within a few months. Plans are being considered with a view of entirely rebuilding the mill, or of constructing a new building. Whichever plan is taken, the floor space will be largely increased. It will probably be necessary for the mill to shut down for a part of the time, at least while changes are being made.

Mills Starting Up.

*New Hampshire, Meredith. About March first the Meredith Linen Mills will be in practically full operation. This company has been organized with capital stock of $100,000 to operate the plant

formerly known as the Atlas Linen Corporation. G. E. Gordon is president, George M. Brooks is treasurer and buyer, and Alfred F. Hall is in charge of the plant. They will make all linen crash and towels, and sell product direct.

Mills Shutting Down.

Canada, Montreal. The Colonial Bleaching and Printing Co., Ltd., of the Dominion Textile Co., Ltd., will shut down, and it is reported that part of the plant will be moved to Magog, where the Dominion Textile Co., Ltd., has a branch bleaching and finishing plant. The company states that the plant will be shut down on account of lack of orders.

FIRES.

Massachusetts, Ludlow. Damage amounting to from $4,000 to $5,000 was caused by fire in No. 8 Mill of the Ludlow Manufacturing Associates. It has no effect upon the running of the mills.

New Hampshire, Tilton. Fire in the plant of G. H. Tilton & Son caused loss of about $5,000. The damage will be repaired at once.

Pennsylvania, Philadelphia. The two-story brick building 100 by 40 feet on C St., above Westmoreland, occupied by the Diamond Textile Machinery Co. and the Hagar Hosiery Finishing Works, has been completely destroyed by fire. The loss is estimated to be about $25,000.

FACTS AND GOSSIP.

New York, Buffalo. The Crocker & Waite Silk Co. has been incorporated with capital stock of $10,000 by William H. Crocker, Geo. Waite and Frank M. Leslie, all of this city.

New York, Chadwicks. The Standard Silk Co. is installing a system of humidifiers manufactured by the American Moistening Co., Boston, Mass.

New York, Cohoes. The Cohoes Pickering & Garnetting Co. has been incorporated with capital stock of $10,000 to manufacture shoddies, waste, and batting. Thos., Thos. S. and Mary E. Kidluff, all of this place, are the incorporators.

*New York, Oswego. The Ontario Industrial Co., reported incorporated with capital stock of $36,000, will manufacture yarns. Eliott B. Mott, Charles A. Tanner and M. J. Cummings are the promoters.

New York, Victory Mills. Saratoga Victory Mills have placed a large repeat order for humidifiers with the American Moistening Co., Boston.

*North Carolina, Bessemer City. Caesar Cone, D. B. Coltrane, R. R. Ray, J. A. Long, and A. J. Draper are the directors of the Slater Mfg. Co., reported incorporated with capital stock of $35,000, of which $50,000 is to be preferred, to take over and operate the Southern Cotton Mills. Mr. Coltrane will be president and manager of the company.

North Carolina, Bessemer City. The Mascot Cotton Mills have been incorporated with capital stock of $50,000 by A. R. Ormand, C. W. Fuller and associates.

*North Carolina, Charlotte. It has been decided by the Highland Park Mfg. Co. not to build at this time the proposed coarse yarn mill recently mentioned.

*North Carolina, Greensboro. The trustees of the Pomona Mfg. Co. have been authorized to borrow an amount not exceeding $15,000 to pay the expenses of the receivership.

*North Carolina, Hendersonville. Local men have not subscribed the amount required for the proposed cotton mill, but the committee hope to raise the necessary amount.

*North Carolina, Hendersonville. There is nothing further in regard to the proposed cotton mill. D. D. Little of Spartanburg, S. C., who heads the project, advises that nothing further will be done until Hendersonville business men subscribe the necessary $50,000.

North Carolina, King's Mountain. An order has been issued by the Court placing the John Mfg. Co. temporarily in the hands of O. L. Watts of Shelby, receiver. It is stated that C. J. Rhoades, secretary, treasurer and manager of the company, has misappropriated funds of the company, thereby putting it in a state of embarrassment The company has capital stock of $100,000 and operates 5,000 spindles on 8s to 16s yarns. The mill is in operation.

*North Carolina, Salisbury. Nothing definite can be learned regarding the movement to organize a new cotton mill in this city.

*Ohio, Dresden. T. Epstein has purchased the old hosiery plant formerly operated by Kapner Bros. & Duga Hosiery Co., and it is stated will operate it.

Pennsylvania, Allentown. The Laurel Hill Dyeing Co. has been incorporated with capital stock of $12,000 by William Gehringer, Jos. Tozzi and S. Meister, and will take over the business now operated under same name. They are dyers of blacks and colors on skein silk. S. Meister is president, and Wm. Gehringer is treasurer and manager.

*Pennsylvania, Allentown. No decision has been made as yet by Klotz & Bregenzer as to enlargement of their plant by building on the tract of land adjoining their present mill, which was recently purchased by them.

*Pennsylvania, Chester. It is stated that as there is little probability of the new lace company, being organized in Philadelphia, securing the plant of T. I. Birkin & Company, for which they have been negotiating, it is understood that the new company will either lease or build a plant of its own.

Pennsylvania, Philadelphia. The Feldstein Company has purchased from John Gardner & Son their mill building with the ground adjoining for $36,000. The property was sold subject to leases. The Feldstein Company will not decide for several months whether to occupy the building.

*Pennsylvania, Philadelphia. The Huddersfield Worsted Company, a new concern incorporated

with capital stock of $25,000, has purchased the machinery of the Lehigh Worsted Company. Fred Shaw is president and treasurer of the new company, and Tom Dyson is secretary and manager. The Lehigh Company operated 26 broad looms on worsted dress goods and men's wear.

Pennsylvania, Philadelphia. The plant of Andrew Burton Co., cotton, woolen and fancy dyers, is very busy on hosiery, of which they make a specialty.

*Pennsylvania, Renovo. Heinrich Klerx, general superintendent of the Susquehanna Mills, Sunbury, Pennsylvania, has looked over the ground at this place, but decided not to build here. It was preiouvsly reported that Mr. Klerx was contemplating starting a silk mill at this place.

Pennsylvania, Scranton. An increase of 5 per cent. over the present wages has been announced in the Petersburg Silk Mill. Reiling & Schoen are the proprietors. It is stated that this is the third increase of 5 per cent. that has been given the operatives of this mill within a year. The operatives of the Penikees Mill, Valley Falls, Rhode Island, owned by the same company, were recently given an increase of 5 per cent.

Rhode Island, Central Falls. It is reported that a woolen manufacturing company is in communication with Mayor Pigeon regarding the location of a new woolen mill here.

Rhode Island, Centreville. Employes in some departments of the Warwick Mills have received an increase in wages, amounting to about 20 per cent.

*Rhode Island, Greenville. The Windsor Mill, formerly occupied by the Hygienic Fabric Co., which was partially destroyed by fire, is being repaired. A new tower is to be erected, and the mill will be quite modern in every respect. The Hygienic Fabric Co. will not again occupy the building, and it is reported that there are two companies ready to lease the property.

*Rhode Island, Pawtucket. Daniel T. Brown, president of the Glencairn Co., has purchased the three-story building which formerly belonged to the New England Thread Co. on Saunders Street. The Glencairn Co. will occupy the plant.

Rhode Island, Pawtucket. Reports that a three-story brick addition is being built for the Lorraine Manufacturing Co. are not true.

*Rhode Island, Westerly. No decision has been made regarding the location of the new Narrow Fabric Co. Milton Steere, the inventor of the narrow fabric loom to be used, his son, Frederick Steere, and others, have looked over several sites offered in this city. They will locate either here or in the town of Stonington.

Rhode Island, Woonsocket. The Jules DeSurmont Worsted Co. has been incorporated with capital stock of $500,000. The incorporators are Jacques W. Hamm, Louis Galle, and Edmond Quesiaux. Up to the present time the mill has been operated as a branch of the parent concern in France.

South Carolina, Edgefield. It is reported that the Edgefield Mfg. Co.'s property will be sold shortly, and put in operation by the new owners. Receivers were appointed for the company and the plant shut down in October, 1908.

South Carolina, Lancaster. It is reported that Leroy Springs, president of the Lancaster Cotton Mills, has plans for the erection of three new cotton mills.

South Carolina, Lexington. The organization of a 25,000-spindle cotton mill is proposed by Perry Hall. Mr. Hall is now developing a water power which will furnish 1,000 h. p., which he contemplates using in the cotton mill. Cotton sheetings and convertibles will be made if the proposition is carried to a successful conclusion.

South Carolina, Westminster. It is reported that W. E. Cheswell is organizing a company to build a cotton mill.

*South Carolina, Woodruff. The proposed addition to the Woodruff Cotton Mills will not be built this year. An early report stated that construction work would be started during the summer.

Tennessee, Memphis. The Business Men's Club is interested in a proposition to locate a cotton mill in this city. Mr. Carter of the American Bag Co. stated that his company would take the output of a company similar to the one considered.

*Texas, Fort Worth. It is rumored that Fred H. White of Charlotte, N. C., through his attorneys, Miller & Stephens, of this place, has arranged to locate a $350,000 cotton mill in Fort Worth. It is stated that the plant will be located at Factory Place. $50,000 worth of real estate has been donated to the company.

Virginia, Basic City. The Blue Ridge Woolen Mill, which has been shut down since May, 1908, will not be started up again by its former owners. The mill and equipment consisting of 6 sets and 30 broad looms with dye plant has been offered for sale. It is stated that two parties are considering purchasing the property and starting it up.

A. C. Houston, superintendent of the M. L. Hussey Woolen Company, Guilford, Me., is seriously ill at his home suffering from lumbago.

Chas. Jenkins, overseer of the tool making department at the Lowell Machine Works, Lowell, Mass., has severed his connection with that company. He was presented with a beautiful gold watch by the help employed in his department. He is succeeded by Alfred Gafts.

Geo. K. Townsend has resigned his position as overseer of dyeing at the American Grass & Twine Company, St. Paul, Minn.

John Hobin, president of the Loom Fixers' Association, Fall River, Mass., has been reappointed president; John Flaxington of Pawtucket, R. I., first vice president; Fred Barker of Westerly, R. I., second vice president and Thomas Taylor of Fall River, secretary, at a meeting recently held.

Thomas J. Allard, formerly superintendent of the Geo. C. Moore Mill at North Chelmsford, Mass., has been appointed to a responsible position at the Arlington Mills, Lawrence, Mass.

Personals.

Louis Simpson, manager of the Montreal Cotton Company, Valleyfield, Que., Canada, has tendered his resignation to take place on March 1st. He intends going into the business of electric reduction of cotton ores. Some eight years ago he first took up the question of electric reduction of iron ores and at his request during the past six years, the Canadian government has appointed no less than three royal commissions to investigate and report on the possibilities of the process.

John Moore has accepted the position as overseer of dyeing at the Kent Mfg. Company, Centreville, R. I., succeeding Alec Linton.

Jos. D. Price, overseer of dyeing at the River Spinning Company, Woonsocket, R. I., has severed his connection with that company.

Chas. W. Auel has accepted a position as manager of the Forest Mills Company, Bridgton, Me. He was formerly manager of the Saugus Mfg. Company, Saugus, Mass., and also held positions as manager in other large mills in the New England States.

John Hardacre, overseer of weaving at the C. A. Root & Company, Uxbridge, Mass., has severed his connection with that company.

Thomas Smith has accepted the position as overseer of weaving at the C. A. Root & Company, Uxbridge, Mass. Mr. Smith formerly held this position.

Samuel Walsh, formerly overseer of dyeing at the French River Textile Company, Mechanicsville, Conn., has accepted a position as overseer of dyeing at the River Spinning Company, Woonsocket, R. I.

W. J. Battye, designer at the Coronet Worsted Company, Mapleville, R. I., has severed his connection with that company.

Thomas E. Ainley, superintendent of the No. 4 Mill of the Warren Cotton Mills, West Warren, Mass., has severed his connection with that company.

J. A. Murray, formerly second hand in the carding department at the Chase Woolen Mills, Webster, Mass., has accepted a position as overseer of carding nights at the Amos Abbott Company, Dexter, Me.

John C. Griffin was elected president and treasurer and A. K. Butler, secretary of the Somerset Worsted Mills, East Madison, Me., at a meeting recently held by the directors.

F. L. Port, superintendent of the Lewis Knitting Mills for the past year, has severed his connection with that company and accepted a similar position in a large knitting mill in Philadelphia.

J. C. Foster has taken charge of the Bellevue Cotton Mills, Newport, Tenn. The name has been changed to the Willard Cotton Mills. W. O. Willard of Liberty, S. C., is president and treasurer of the company.

George S. Caine, overseer of the finishing department at Saylesville, R. I., has resigned and accepted a similar position at the Bernon Mills, Georgiaville, R. I.

Albert Elliot, overseer of the warping department for A. D. Erwin & Bro., Philadelphia, has resigned and with George Olden formed a partnership to manufacture men's wear in that city.

Robert Harney, overseer of dressing at the J. L. & T. D. Peck Mfg. Company, Pittsfield, Mass., has resigned.

Wm. Fish, Jr., has been elected a director of the John P. King Mills, Augusta, Ga.

John M. Lancaster, overseer of weaving at the Pocasset Mfg. Company, Fall River, Mass., has severed his connection with that company.

Henry Cave has accepted a position as overseer of dyeing at the Brown Mercerizing Company, Amherst, Mass. He was formerly employed at Belding Bros. Silk Mill, Northampton, Mass.

Jos. Donahue has accepted a position as overseer of carding at the Priscilla Woolen Company, Spencer, Mass. He comes from Harrisville, R. I.

L. B. Foss has accepted a position as overseer of finishing at the Wassookeag Woolen Company, Dexter, Me. He was formerly employed at the Sutton Mills, North Andover, Mass.

Eli Payette, employed in the finishing department at the Carter & Rogers Woolen Mill, Lebanon, N. H., slipped and fell into a vat of boiling soap, receiving burns from which he died a few hours afterwards. He leaves a widow and three children.

Robert H. Hart, for sixteen years an active woolen manufacturer of Ashland, N. H., died at his home on Highland St., January 28th. He had been in failing health for some time and had just returned from the Lacon, N. H., Hospital. He was born in Newark, N. J., January 6, 1850, and was a member of the Ancient York Masonic Lodge of Lowell, Mass., also a member of the local Knights of Pythias. He is survived by a widow and one daughter.

Walter E. Parker, agent of the Pacific Mills, Lawrence, Mass., has been appointed agent of the Cocheco Mfg. Company, Dover, N. H., in connection with his other duties, the Cocheco Mfg. Company having been recently taken over by the company who controls the Pacific Mill. Herbert Owens, who has been acting agent since the resignation of Chas. H. Fish, has been appointed general superinttndent of the Cocheco plant.

Edmond L. Lalime, superintendent of the Laurel Lake Mills, Fall River, Mass., has severed his connection with that company. It is reported he will accept a position elsewhere.

Geo. Parker, superintendent of the combing, winding, reeling and spooling departments of the No. 1 Mill of the Geo. H. Gilbert Mfg. Company, Ware and Gilbertville, Mass., has been appointed

to a similar position at the No. 4 Mill, filling the position formerly held by John Greenhalgh.

C. H. Chisholm has accepted a position as overseer of the cloth room at the Natchez Cotton Mills, Natchez, Miss. He succeeds L. F. Rector.

A. C. Giles has accepted the position as overseer of weaving at the Natchez Cotton Mills, Natchez, Miss. He succeeds D. F. Poole.

W. F. Griffin, overseer of spinning at the Ida Mills, Laurel Hill, N. C., and Miss Emma Horne of Monroe, N. C., were married January 24.

J. L. Robinson has accepted the position as overseer of carding at the Locke Mills, Concord, N. C. He comes from Bessemer City.

C. N. Graddy has accepted the position as overseer of spinning at the Tolar, Hart & Holt Mills, Fayetteville, N. C.

J. Walter Johnson has accepted the position as overseer of weaving at the Manchester Mills, Rock Hill, S. C., succeeding M. D. Hanley.

G. R. White has accepted a position as superintendent of the Leeco Mfg. Company, Jonesboro, N. C. He comes from Lexington, N. C.

John Fernander has been promoted to the position of overseer of spinning at the Alexander City Cotton Mills, Alexander City, Ala. He was formerly second hand in that department.

John A. Hadgens has accepted a position as overseer of spinning at Liberty, S. C. He comes from the Grendel Mills, Greenwood, S. C.

Gustave Prevost has accepted the position as overseer of dyeing at the Somerset Mfg. Company, Raritan, N. J. He comes from Woonsocket, R. I.

Charles A. Schieren, Jr., treasurer of the Charles A. Schieren Co., sailed on the 15th of February for his annual business trip to Europe to be gone several months. He will visit Paris, Hamburg and Vienna. At this latter point this company is establishing another foreign branch house.

John P. Craig has accepted a position as second hand in the carding department at the Globe Mills, Woonsocket, R. I. He comes from the Fisher Mfg. Company, Fisherville, Mass.

Thomas Brindle has accepted a position as superintendent of T. Martin & Bro. Mfg. Company, Chelsea, Mass., manufacturers of elastic and non elastic webbing.

Jos. Blair has accepted a position as overseer of spinning at the Pontoosuc Woolen Mfg. Company, Pittsfield, Mass., in what is known as the English carding and spinning department.

John W. Gledhill, overseer of finishing at the Emerald Mills, operated by Jos. Greer, Worth St., Philadelphia, Pa., has severed his connection with that company.

Milton Dean has been appointed general superintendent of the weaving department of the Dwight Mfg. Company, Chicopee, Mass., to fill the position occupied by Oliver Drew.

Thomas F. Carroll, superintendent of the Wm. Warren Thread Works, Westfield, Mass., has severed his connection with that company after twenty years of continuous service. He started in as a boy and worked his way up to the position he held at the time of his retirement.

Martin J. Nelson has severed his connection as overseer of finishing at the Davenport Woolen Mills Company, Davenport, Ia.

David Welsh, overseer of finishing at the Waterloo Woolen Mfg. Company, Waterloo, N. Y., has severed his connection with that company.

Wm. Wells, overseer of dyeing at the Ray Mills, American Woolen Company, Franklin, Mass., has severed his connection with that company.

Major T. Melvin, for the past four years overseer of the weaving department at the Laurel Lake Mills, Fall River, Mass., has been appointed superintendent.

Patrick Corbett, overseer of the carding department at the St. Croix Cotton Mill, Milltown, New Brunswick, has resigned. The vacancy has been filled by Mr. Greenwood of Hamilton, Ont., Canada.

Frank Bean has accepted the position as loom fixer at the Gonic Mfg. Company, Gonic, N. H.

John Riley, for many years employed at the Atlantic Mills, Providence, R. I., has severed his connection with that company. It is reported he has accepted a position as overseer of weaving in a large mill in New Hampshire.

E. Burbeck, second hand in the worsted spinning department at the Geo. H. Gilbert Mfg. Company, Gilbertville, Mass., has severed his connection with that company.

James Yuill has been appointed overseer of weaving in one of the departments at the Amoskeag Corporation, Manchester, N. H. Harry Laraba has also been appointed overseer of weaving in one of the departments for the same company.

John H. Greenhalgh, overseer of the dressing, spooling and winding room at the Geo. H. Gilbert Mfg. Company's No. 4 Mill, Gilbertville, Mass., has resigned.

Augustus Foreman of Union Hill, N. J., has been appointed superintendent of the Hermina Silk Company, Hopkinton, Mass.

Jos. F. Shaw, for many years secretary of the American Woolen Company, with office at Boston, Mass., has severed his connection with that company.

James Hargreaves, overseer of the weaving department at the Sagamore Mills, Fall River, Mass., has severed his connection with that company and as a result two hundred weavers went on strike. It is claimed their object was to have the overseer reinstated.

Geo. Cotterill, machinist for the Vermont Hosiery & Machine Company, Northfield, Vt., has severed his connection with that company. He is succeeded by John Temple of Bennington, Vt.

Hon. Arthur H. Lowe, president of the Lancaster Mills, Clinton, Mass., has given a lot of land to be used as a public playground. Such a gift is highly appreciated by the young folks of that town.

Edward O. Crosby, overseer of the print works at the Cocheco Mfg. Company, Dover, N. H., has severed his connection with that company. He was presented with a signet ring as a token of the esteem and respect in which he was held.

Ludwig B. Luithlen, proprietor of the L. B. Luithlen Dyeing & Finishing Works, Ontario St., Philadelphia, Pa., died at his home at the age of 81 years. He was a member of the G. A. R., and many other organizations. He was born in Germany in 1827 and is survived by one daughter.

Ernest A. Sutcliffe has accepted the position as overseer of dyeing at the R. I. Worsted Company, Stafford Springs, Conn. He comes from Woonsocket, R. I.

Robert S. Ross has signed a contract with the Mercer Silk Mills as superintendent of their mills at Mercer, Pa.

John Williamson, overseer of weaving at the Geo. W. Olney Woolen Company, Cherry Valley, Mass., has severed his connection with that company. It is reported he and his son, Burt Williamson, are to start in business at Worcester, Mass.

J. D. Armitage, formerly superintendent of the Arlington Mills, Lawrence, Mass., but who later started in the manufacture of worsted dress goods under the firm name of J. D. Armitage & Company, mill located in the same city, has been appointed agent of the Cambridge Mills, American Woolen Company, Fitchburg, Mass.

Edward H. Heine has accepted a position as overseer of weaving at the Marsden Worsted Mill, Skowhegan, Me. He comes from Webster, Mass., and succeeds Peter Hill, who resigned.

B. W. Washburn, overseer of dyeing at the R. I. Worsted Company, Stafford Springs, Conn., has resigned and accepted a position with the Ray Mills, American Woolen Company, Franklin, Mass., a position he formerly held.

Geo. Battye has accepted the position as designer at the Linn Woolen Company, Hartland, Me.

Walter Brockmiey, who was employed at the Mankato Mills, Mankato, Minn., has resigned and is to accept a position at Cincinnati, O.

J. A. Lloyd, overseer of dressing at the Knoxville Woolen Mills, Knoxville, Tenn., has severed his connection with that company.

James Bullet has accepted a position with the J. L. & T. D. Peck Mfg. Company, Pittsfield, Mass. He comes from Turners Falls, Me.

Thos. Perkins has been appointed superintendent of the Chicopee Mfg. Company, Chicopee Falls, Mass. He was formerly employed as assistant superintendent at the Tremont & Suffolk Mills, Lowell, Mass.

E. W. Billings, of the Amazon Knitting Company, Muskegon, Mich., has severed his connection with that company after five years of service.

DEATHS.

Geo. H. Shapley, treasurer of the Silver Lake Company, Newtonville, Mass., and a well known resident of Newtonville, died at his home at the age of 60 years. He became treasurer of the Silver Lake Company, which concern manufactures cordage, twenty-five years ago. Was also a member of the firm of Shapley Bros., clothing merchants, in Leominster, Mass. He was a well known member of the Masonic organization, also a member of the Newton Club. He is survived by a wife.

Geo. T. Hughes died at the home of his brother-in-law, Dr. Knight of Lowell, Mass. Mr. Hughes had been employed thirteen years at A. L. Sayles & Sons Mill, Pascoag, R. I., as overseer of dyeing, but resigned the position some time ago on account of poor health. Before coming to Pascoag, he was employed as overseer of dyeing for Sayles & Jenks at Warren, Mass.

Geo. W. Harris died at his home at 252 Pawtucket St., Lowell, Mass., after a long illness. He had been in business as a loom harness manufacturer for a number of years.

Matthew C. Cunningham, a member of the firm of Cunningham & Seal, wool brokers of Philadelphia, died suddenly of heart disease in that city at the age of 62 years.

Arthur Knowles died February 10 on his way to work at the Acushnet Mills, where he had been employed. His death was due to heart failure. He was 52 years of age and a brother of J. Frank Knowles, agent of the Acushnet and Hathaway Mills.

Paul E. Faudre, overseer of carding at the new Lincoln Mills, Fall River, Mass., died at his home in that city at the age of 38 years.

Geo. E. Shepard, ex-Mayor of Franklin Falls, N. H., and for several years a manufacturer of woolen and knit goods, died at his home in that city, having been stricken with paralysis. Some years ago he purchased an interest in what was known as Colby, Shepard & Company, a concern which manufactured hosiery and cloths. Six years later he sold his share of the business and purchased one-sixth interest in the Scythe factory but later sold out and returned to the woolen business, removing to East Andover, Conn., where with R. O. Messer, they manufactured hosiery for about three years. Later he was engaged in the lumber business.

Thomas Oliver, inventor of the Oliver typewriting machine, died suddenly of heart disease while waiting with his wife at the railway station in Chicago to start for Pine Bluff, Ark., to test a cotton picking machine which he had recently invented and which he declared would revolutionize the cotton industry.

Leander R. Peck, president of the Lawton Spinning Company, Woonsocket, R. I., and a member of one of the state's oldest families, died at Providence, R. I., after an operation for appendicitis. He was a member of the West Side Club, the Providence Central Club and the Ponham Club. His business career had been identified mainly with Asa Peck & Company. He was born February 12 1843.

New Publications.

[Any work noticed under this head can be obtained through the office of this journal.]

Rugs; Oriental and Occidental, Antique and Modern; by Rosa Belle Holt; 200 pages, 8 by 11; 34 illustrations, 12 in color; A. C. McClurg & Co., Chicago; price, $5.00.

In the second edition of this book, published October 10, the author has given the most recent information on this interesting subject, obtained by investigation throughout the United States, by subsequent study in the art centers of Europe, and by personal observation in the Orient. Chapters which appeared in the first edition have been revised as reliable information has increased considerably and circumstances connected with the buying and selling of Oriental rugs have changed.

The present enlarged edition gives the history and details of rug weaving in the Orient, Europe and the United States, classifications of rugs with characteristics, geographical data, list of authorities and miscellaneous information. Owners of rare rugs have co-operated with the author in the securing of descriptions and reproductions of famous designs and colorings and the engraver and printer have done their share in producing a work of unusual merit. The color plates are fine examples of color printing.

Dyeing and Cleaning: by Frank J. Farrell, M. Sc.; J. B. Lippincott Co., Philadelphia, Pa.; 228 pages; 7 1/2 by 5; price $1.75.

The author has endeavored to confine this book to the practical side of dyeing and cleaning and has excluded as far as possible matter dealing with the general principles governing the various processes. The scope of the work is indicated by the following abstract of the table of contents: Technology of the Textile Fibers, Dry Cleaning, Wet Cleaning, Dyeing, Dry Dyeing, Special Methods, Finishing. The book is freely illustrated and will prove of value to all garment cleaners and dyers.

Distinguishing Cotton from Linen (Die Unterscheidung von Baumwolle und Leinen); by Prof. Dr. Alois Herzog; Zeitschrift fuer Textil-Industrie, Berlin, Germany; price 50 cents.

A second edition of this useful pamphlet has been recently published and includes some additional matter designed to make the study of the subject more complete. We published in our October, 1906, issue a translation of this pamphlet, the original text of which is in German.

Hendricks' Commercial Register of the United States; 1,240 pages, 7 1/2 by 10; Samuel E. Hendricks Co., 74 Lafayette St., New York, N. Y.; price $10.00.

The new edition of this work has been received and shows the usual care in preparation, printing and binding. It is stated that over 350,000 names and addresses and upwards of 30,000 business classifications are contained in the book. The Register is especially devoted to the interests of the architectural, mechanical, engineering, contracting, electrical, railroad, iron, steel, hardware, mining, mill, quarrying, exporting and kindred industries and classified lists covering manufacturers of and dealers in materials used in these lines are given. The arrangement is according to states and lines of business, and adapts the lists for use as either a buyer's reference or for mailing purposes. No charge is made to the firms whose names are listed in the Register, the main object of the publishers being to make their lists as complete as possible for the benefit of the reader.

The Theory of Dyeing Processes (Die Theorie der Faerbevorgaenge); by Dr. Procopios Lacharias; 420 pages, 9 1/2 by 6 1/2; Verlag fuer Textil-Industrie, Berlin, S. W.

The author is an instructor at the university of Athens, the first edition of the work being in Greek. He treats the processes of dyeing from the purely theoretical standpoint, and the volume testifies to his industry and research. The book is divided as follows: Part 1, Processes previous to 1888; Processes from 1888 to 1900; Translation from the Greek of P. D. Zacharias; Theory of Absorption. Part 2, Processes from 1900 to 1908; General Comments; Conclusion. The text is in German.

The Textile Union (Union Textile); 296 pages, 6 by 9 1/2.

Eight years ago the textile manufacturers of France formed an association, called the L'Union des Syndicats Patronaux des Industries Textile de France for the purpose of defending their common interests in all matters except those involving the question of free trade and protection. The membership of the Union was confined to associations representing the various branches of the textile industry, cotton, woolen, worsted, silk, linen, knitting, etc. The reasons for adopting this form of organization in preference to one composed of individuals are outlined in the history of the Union as follows: "The textile industry is essentially diverse; each of the branches has its special interests which are necessarily represented by its special association. These associations representing the different branches of the industry, strangers yesterday, but closely connected today, find the Textile Union to be the natural exponent of their interests on that common ground to which they are drawn by industrial and fiscal questions, and from which questions involving a tariff on imports are excluded. Thanks to this wise system of decentralization, the Union is thus the true representative of the textile industry, which, in all its various forms is permeated with the spirit of maintaining national production at the high standard already reached."

It is this Union that has issued the volume under review. It begins with a brief history of the organization, which is followed by a list of the associations that are members. A list of the members of each of these subordinate associations is also given.

The sixty-six associations forming the Union represent the cotton, hosiery, linen, jute, silk, worsted, woolen, lace, asbestos, carpet branches, as well as the weaving, spinning, dyeing, printing and finishing trades, each being left free to look after its special interests, and yet all uniting for

the purpose of acting as a unit in the defense of common interests.

The volume gives a copy of the constitution of the Union and a list of the officers.

Annexed to the portion relating particularly to the Union are a number of chapters giving data of interest to the textile industry. These cover such subjects as the statutes relating to labor, patents, workmen's pensions, industrial and commercial associations and transportion.

The concluding chapter gives a list of the resolutions adopted at the last general meeting (Reunion generale) of the Union on March 19, 1908, and which deal with such questions as the regulation of employment, a proposed amendment to the internal revenue law, homes for disabled workmen, regulating dangerous employments, accidents to workpeople, compulsory technical instruction, alcoholism.

The volume is of especial interest in the United States in view of the attention now being directed to an improvement in association work. For this reason we place before our readers in this issue a translation of a few chapters dealing with the history and organization of the Union. The text of this book is in French.

Preparation of Yarn for Weaving (Preparation der Tissage); by Adolphe Hullebroeck; Ch. Beranger, 15 rue des Saint-Peres, Paris; price $4.00.

The subject is treated in this volume under four heads, Spooling and Winding, Warping, Sizing Materials and Machines for Sizing. The various machines and processes in use in French mills are clearly illustrated and described. In the second section treating of Warping there are a large number of warp drafts arranged to illustrate the practical details of the process. The chapters on sizing materials and apparatus are very complete, and have an especial interest for American readers because they they give information concerning French methods, about which little is generally known in this country. The text is in French.

Weaving; by H. W. Nelson, American School of Correspondence, Chicago; price $3.00.

This book, which is one of the series comprising the Textile Encyclopedia, is now being published in one volume and may be had separately from the encyclopedia if desired. It is intended to furnish a comprehensive treatment of the subject of weaving and aims to be a practical guide on mechanical production, operation and care of weaving machinery, giving details of various mechanical processes involved.

It is divided into four main sections: 1st, Warp Preparation; 2d, Adjustment, Operation and Care of Looms; 3d, Weave Room Calculations; 4th, Jacquard Machines. The book is profusely illustrated and handsomely bound. The author, H. William Nelson, was for a long time head of the department of weaving at the Lowell Textile School.

Weaving Mill Management; by A. R. Foster; 110 pages, 4 1/2 by 7; John Heywood, Manchester, Eng.; price, $1.50.

The object of this book, as announced in the preface, is to supply the deficiencies of textile literature, that is, to treat of those subjects that have been overlooked by textile writers. In pursuance of this object the author has compiled under the following heads a mass of notes on a wide variety of topics relating to mill management: Weft room, warp room, twisting-in room, the weaving shed, the piece room, the card room, the design room, centralization of oversight, accurate costing and depreciation. One feature of the book that strikes the reader as rather curious is the omission to state the branch of the textile industry to which the author's remarks more particularly apply. The information or advice is given and one is then left to apply it as his special circumstances require. This vagueness runs all through the book and as a result much work is left for other writers before the professed object of this book can be considered as accomplished.

American Business Enterprise; by Douglas Knoop, M. A. Gartside Scholar; 103 pages, 5 3/4 by 9; Sherratt & Hughes, Manchester, England. Price $1.00.

It is interesting and almost always profitable for us to see ourselves as others see us and in this book we learn how a student of the University of Manchester looks upon the business enterprise of Americans. His discussion is presented under the following heads: Business Enterprise. The Establishment and the Scale of Industrial Concerns. Integration and Subsidiary Work. The Establishment of Retail Stores by Manufacturers. The Control of Retail Prices by Manufacturers. The Manufacture and Marketing of Related Products. The Position of the Middleman.

Business Literature.

Spinning Spindles; Easton & Burnham Machine Co., Pawtucket, R. I.

A catalogue describing and illustrating the E & B spinning spindle. There is also a very interesting account of the process of manufacture with illustrations of the works and the special machinery used in testing the spindles.

Buffalo Fan System: Heating, Ventilating, Humidifying, Drying; Catalogue 197; Buffalo Forge Co., Buffalo, N. Y.

In addition to displaying the products of the company, catalogues and other business literature of certain well-known concerns have found a further use as records of tests and other data, invaluable to the industrial world, but which are not available in any other form. Catalogue 197 of the Buffalo Forge Company takes its place among such business literature.

Part 1 deals with heating and ventilating public buildings; Part 2 with industrial buildings; Part 3 is devoted to the apparatus of the Buffalo Forge Company, and Part 4 gives general data on heating and ventilating. The facts and figures given are from records carefully compiled and verified by the engineers of the company. The mechanical features of the catalogue are well executed and the arrangement, charts, diagrams and half-tone illustrations combine to make a catalogue of more than ordinary worth.

Electric Equipment.

Among the recent orders taken by the Crocker-Wheeler Company of Ampere, N. J., is one for a 250 k. w. motor-generator set for the Tennessee Coal, Iron & Railroad Co., at Ensley, Ala. It will consist of a 250 k. w., 275 volt, d. c. generator driven by a 6,600 volt, 3 phase, 25 cycle synchronous motor and will be used as an exciter. Another order is one for about 50 horsepower of small elevator motors purchased by the Haughton Elevator & Machine Co., of Toledo, O. Yawman & Erbe, of Rochester, N. Y., have also placed orders for a number of 2/5 horsepower motors for use on some of their specialties.

A Feed Water Regulator.

A proper boiler feed water regulator is just as essential to the steam plant as the card feed is to a set of woolen cards. The manufacturer might possibly get along without either, but he is losing money in one case about as much as the other. The Berry Engineering Co., Chester, Pa., manufactures the Berry safety automatic feed water regulator. It is a standard device and overcomes all the difficulties and dangers attendant upon improper supply of feed water.

Prue's Labor Saving Spindle.

This improved spindle for cop yarn winders is receiving the indorsement from manufacturers by repeat orders. By means of a spring attachment the cop rises as it empties so that it is claimed 90 per cent. of the cops run off clean at the tube end.

The following letter from the Little Falls Mfg. Co. indicates the satisfaction they are giving:

Mr. Frank J. Prue, Woonsocket, R. I.

Dear Sir: You may enter our order for 220 spindles the same as the last lot which you finally put on our winder which gave better results than the first. It is our desire to equip 11 more of our 20 end winders exactly the same as the one you fixed up for us which we are now running. If these give the same satisfaction we shall equip the balance of our winders the same way.

Very truly yours,

Little Falls Mfg. Co.

A later letter says:

We have found very satisfactory the attachment and the spindles you placed on one of our winders, and have decided if we can make satisfactory arrangements to have you equip the balance of our winders. Please advise us your best price to equip 11 more winders in exactly the same way.

Change of Address.

Stewart & Sons, manufacturers of loom reeds, have sent out a notice to the trade that owing to their rapidly increasing business they are compelled to seek larger quarters and are now located at Jasper and Orleans Sts., where, on account of their improved facilities, they are in a position to handle the business to much better advantage.

A New Bleach and Dye Works at Fall River.

Mr. Thomas Hopkinson of Fall River, Mass., who is well known in his line as a recognized authority on dyeing and bleaching, has recently organized the Hopkinson Dyeing & Textile Works, of which he will be proprietor and general manager. He will have associated with him Mr. G. W. Hopkinson as superintendent. Their business will consist of bleaching and dyeing of cotton, skein yarn, tie bands, twines, braids and all narrow fabrics. They will also make a specialty of cone winding or tube winding to order.

The new building which they now occupy is two stories high, 35 by 90 ft., and is located on Forest St. The building is fitted up with the latest and most improved equipment of machinery necessary. Among the machinery noticed are the "Universal" Payne winders, and Schaum & Uhlinger's hydro-extractors; the boiler is of the Robb-Mumford pattern, built at South Framingham, Mass. They started operations Feb. 25 and report business in a most satisfactory state already, having a number of very substantial orders on which they are now working.

Mr. Hopkinson informed the writer that he intends to build an additional building entirely for bleaching purposes. Any mill needing the services of an establishment of this kind will do well to communicate with them.

The Textile Machinery Exhibition at Boston.

Owing to some changes which it was necessary to make in the printed matter, there has been a slight delay in getting it out, but everything is now progressing smoothly and diagrams, with full information concerning the show at the Mechanics Building, April 26th to May 1st, are being sent broadcast from the office of the Textile Exhibitors' Association at 5 Park Square, Boston.

A flat rental for space has been adopted, the price being fixed at $1.00 per square foot, which includes not only rental, but floor covering, sign, dividing railings, furniture, decorations and care of the exhibit in so far as sweeping, etc., are concerned. This enables the exhibitor to determine very closely his total expense.

We understand that much interest is being manifested, numerous applications being received for space. Many of the larger textile machinery companies have already booked. This exhibit is run entirely for the benefit of the exhibitors and is not a money making scheme for anyone. Should there be any surplus it will be distributed among the members of the Textile Exhibitors' Association, to which any exhibitor is eligible for membership.

Sizing and finishing compounds for textile goods of all descriptions are made a careful study by the Arabol Mfg. Co., 100 William St., New York, who also carry a full line of soluble oil, alizarine assistant, Turkey red oils of different percentages for use in dyeing and finishing.

W. B. Conkley Co., Hammond, Ind., Publishers, are sending out a large wall calendar on which is a general view of their plant.

American Raveler Co. of Philmont, N. Y.

One of our representatives reports that the American Raveler Co. of Philmont, N. Y., are very busy filling orders for their improved sewing machine and raveler. Mr. A. L. Traver, who owns the company, has given many years' attention to this particular line of knitting mill machinery and is always on the lookout for any improvements that he can make that will be an advantage to the trade. They have quite recently made a number of important improvements to their ravelers which are much appreciated by the knit goods manufacturers generally.

Correction.

In our February issue in the article on "Reclaim Olive Oil" sold by the H. G. McKerrow Co., Ltd., 88 Broad St., Boston, Mass., an error occurred in stating the price. The reference should have been as follows: The price (of the reclaimed oil) is 45 to 65 cents a gallon under the cost of the ordinary olive oil.

Parks Piping Parables.

Book 5, Spasm 12, dated February, 1909, of Parks Piping Parables, is "perpetrated for the purpose of pushing the piping possibilities of the G. M. Parks Company in particular and published by them periodically at their place, which happens to be at 453 Main St., Fitchburg, Mass." It is really a mill picture book, but the mills are not altogether selected with special reference to their beauty, although many of them are very picturesque. They are in this book because Parks' piping jobs are in the mills which are in the book. They are scattered all over New England. There are some letters in the book too. We presume copies will be sent to interested parties on application.

Hungarian Engineers.

A number of Hungarian engineers and architects following their professions in this country have organized the American Society of Hungarian Engineers and Architects and elected A. Henry Pickler, M. E., president. Mr. Pickler is a member of A. I. E. E. and engineer in charge of the Transformer Department of the Crocker Wheeler Co., Ampere, N. J.

The Wrong Kind.

Members of the New Bedford Spinners' Union are beginning to think that a joke has been played on them by a Western firm, manufacturers of pins and emblems. Not long since an order was sent to Chicago for pins for the mule spinners, asking that samples of a mule emblem be sent them. The committee expected something showing the mules such as are used in the mills. Instead they are now in receipt of a quantity of neat pins bearing the head of a jack mule and the letters I. S. U. The New Bedford union is now trying to figure just who is going to pay for the pins.—The Fall River (Mass.) News.

New Offices.

The Cassella Color Co. have occupied their new offices and warehouse at 39 Oliver St., Boston. These new quarters provide more than double the floor space heretofore occupied, which additional room has been found necessary to accommodate the increasing needs of their customers. The location is convenient to both North and South Stations.

Purifying Water.

The Wm. B. Scaife & Sons Co., of Pittsburg, Pa., manufacturers of the We-Fu-Go and Scaife water softening, purifying and filtering systems, have found it necessary to build an addition to their present plant at Oakmont, Pa., to accommodate their increased business in the building of systems for the purification of water for steam boilers, industrial and domestic uses. They are about to begin the erection of a shop 40 ft. wide by 200 ft. long, equipped with the latest improved machinery, which will be used in addition to their present shops for manufacturing the We-Fu-Go and Scaife systems. They have under construction at the present time for steam boiler plants, systems aggregating 95,000 h. p., in addition to plants for softening and clarifying water to be used in manufacturing processes such as dyeing and bleaching in woolen and cotton mills, and for washing in laundries, also a number of mechanical gravity filter systems for manufacturing and domestic use.

Among some of their recent contracts are the following: Pittsburg-Buffalo Co., Cannonsburg, Pa., 1,000 h. p. system; Merchants' Ice & Cold Storage Co., Terre Haute, Ind., 750 h. p. system; Auburn & Syracuse Electric R. R. Co., Auburn, N. Y., 750 h. p. system; Columbia Plate Glass Co., Blairsville, Pa., 3,000 h. p. system; John A. Manning Paper Co., Troy, N. Y., 750 h. p. system; Natrona Water Co., Natrona, Pa., 500,000-gallon Mechanical Gravity Filter system; Edwards & Chapman (Laundry), Springfield, Ill., 3,000 gallon per hour system; Jenner-Quemahoning Coal Co., Holsopple, Pa., 6,000 gallon per hour system, boilers and town supply.

Spools.

The wood turning business of E. L. Tebbetts & Co., Locke's Mills, Me., has been incorporated and will hereafter be known as the E. L. Tebbetts Spool Co. They manufacture a great variety of thread and silk spools. E. L. Tebbetts is president and treasurer, and Geo. B. Tebbetts, clerk.

Successful Yarn Dyeing.

An interesting letter from Pickup & Kean, Allentown, Pa., appears in the advertisement of the Hussong Dyeing Machine Co. on page 241 of this issue. It is not often that a commercial dyer's customer insists on having his yarn dyed in any special machine and will not accept any other. One of the special features of these machines is the prevention of snarls and tangles.

Charles A. Schieren Co.'s New Boston Store.

The Charles A. Schieren Co. are now settled in their new Boston branch store at 641 and 643 Atlantic Ave., opposite the South Station, where they have floor space of about 6,000 square feet and one of the best appointed leather and belting establishments in the city of Boston. It is most conveniently located not only for the leather district, but near the station and elevated road.

A Good Year.

The Calder Machine Works, 325 Race St., Philadelphia, have been successful since starting in business. Mr. George H. Wornelsdorf, one of the firm, stated that at the end of their first year, the business had increased to such an extent that it was necessary to have more space and have taken the floor above. They manufacture spindles, flyers, caps, tubes and all parts for worsted, wool and silk spinning. Formerly they gave greater attention to the worsted trade, but are now devoting their time also to the silk trade and have been favored by receiving good orders from a number of large silk mills.

Philadelphia Notes.

The Keystone Latch Needle Co., 543 West Lehigh Ave., Philadelphia, have been finding business very fair. They are having a steady demand for the various styles of needles which they manufacture and ship to knitters all over the country. Mr. John C. Egly, manager of this company, is very widely known in the trade.

H. Brinton & Co., Philadelphia, have orders on hand which will keep their works comfortably occupied for some time to come. They have been quite busy for the past few months on hosiery and underwear machinery.

Since the first of the year there has been an increase in the business of John W. Hepworth & Co., N. W. cor. Lehigh Ave. and Mascher St., Philadelphia. They have been running full time since February 1 to fill orders for their well known patent single stitch looping machine.

Oswald Lever & Co., Lehigh Ave. and Mascher St., Philadelphia, report a steady demand for machinery which they manufacture. They are constantly shipping cop winders and spoolers in mills in New York state, eastern and western states.

Edwin A. Newton, dealer of new and second-hand knitting machinery, is getting his new place of business, 310-312 North Fourth St., Philadelphia, in order.

George W. Lindley, 5122 Wakefield St., Germantown, Philadelphia, is very busy on an order for lace machines which he is building for the American Lace Co., Philadelphia. He is also preparing to start on his new automatic seamless fingering machine.

James Taylor, 121 Arch St., Philadelphia, furnished the finishing machinery for the new Clark Knitting Mills at Grand Rapids, Mich., and has recently shipped it to them. Mr. Taylor has recently furnished thirty Standard 200-needle machines to Brownhill & Kramer, Philadelphia.

Water Power.

F. W. Dean, Mill Engineer and Architect, Boston, Mass., is acting for the city of Baltimore, Md., in the matter of valuation of plant and property of the Warren Mfg. Co., Warren, Md., in which are concerned some interesting questions as to the value of an old water power with supplementary steam power as compared with that of a modern steam plant for the development of all power.

Removal Notice.

A. D. Salkeld & Bro., yarn dealers and commission merchants, removed on February 1 to 366 Broadway, corner Franklin St., Rooms 811-12-13, New York.

Worsted Mill Supplies.

For forty years William Crabb & Company of Newark, New Jersey, have supplied the trade with the latest and best in worsted mill supplies, etc.

Since June, 1904, they have occupied a fine modern factory which covers the whole city block at Bloomfield and Morris Canal, where they have every up-to-date facility for manufacturing their various products.

The great care used in all the processes of manufacture and the high class of help employed have given their products such a reputation for satisfaction that the demand is constantly increasing.

A careful examination of their prices shows them to be as low as is consistent with the high quality they maintain.

In addition to worsted mill supplies they make many other products needed by almost every textile manufacturer, such as reeds, cotton banding, card clothing, fullers, feed rolls, steel wire, tentering pins, etc., etc.

N. W. Ayer & Son, Philadelphia, are sending out a large wall calendar in blue and green and on each page of which there is a motto.

The American Moistening Co., Boston, Mass., report a large increase in orders for their humidifiers, receiving since Feb. 10th last to March 1st orders from 17 different mills.

The Worcester Warp Compressing Machine Co. of Worcester, Mass., are very busy and running to full capacity on their specialties of beaming and dressing machines, particularly warp compressors and spoolers.

The Arlington Mills, Lawrence, Mass., have placed a large repeat order for entire new humidifying system with the American Moistening Co., Boston, Mass.

The Meter and Kilo in Romance.

(From the Manila Times.)

The Times has been favored with the advance sheets of the latest novel of Mr. Kipling Highbrow which is to appear early in January. Being a thoroughly up-to-date person Mr. Highbrow has introduced the new system of weights and measures in his clever writing and while the effect is a little odd at times, it is like anything else—you'll get used to it in time. We quote a few extracts from this striking book to illustrate the effect of the new literature. They follow and it should be explained that they were picked at random and are necessarily not connected:

"Approach but a decimeter, Harold Vynne, curses on your handsome face, and I will kill you with this 22 millimeter revolver."

"The poor gurl has wasted away to fifty kilos, alas, I fear at forty kilos, her poor spotted soul will take its flight."

"Clarence Vere de Vere lay as one dead but as we forced a deciliter of brandy down his handsome throat, he started perceptibly and we knew that he lived."

"Take this diamond, petty hearts, it weighs but a milligram, but it is the token of my unbounded love which is at least a tonneau in weight."

"This poor chee-ild asked for a kilo of bread, and you with your myriameters of wealth refused her, a milliner of blights upon you."

"Has he much capacity? Yes, I should say that he will hold at least a kiloliter or stere."

"Walk with me darling, it is but a short kilometer to the old trysting place. And as they stepped the last meter he folded her in his strong arms and reverently kissed her on the classic brow."

The work closes with a very happy paraphrasing of the great Omar, a fragment of which—a mere centare of it—we quote to show its beauty of thought and chasteness of style:

"A kilo of bread
A liter of wine
The thereness of thee
And I am thine."

Recent Textile Patents.

BALING PRESS. 910,741. Horace M. Tallman, Shelbyville, Ill.

LOOM. Circular. 910,742. Chas. Thibodeau, Chelsea, Mass.

LOOM Picker-Check. 910,572. Wm. H. Pierce and Fred Aspin, Accrington, England.

LOOM Warp Stop Motion. 911,002. George M. Foster, Manchester, N. H.

LOOM Double Batten. Ribbon. 911,165. Carl Schneider-Gerster, Gelterkinden, Switzerland.

LOOM Protection Mechanism. 911,152. Jonas Northrop, Hopedale, Mass.

LOOM Protection Mechanism. 911,219. William F. Draper, Hopedale, Mass.

LOOM SHUTTLE. 911,058. Joseph H. Morin, Millbury, Mass.

LOOM Shuttle Motion. 911,334. Eppa H. Ryon, Worcester, Mass.

LOOM Stopping Mechanism. 911,378. Thomas A. Carver, Glasgow, Scotland.

WOOL and Other Similar Fabrics. Combing Machine for. 911,114. Joseph Cooper, John F. White and Louis Cooper, Bradford, England.

KNITTING MACHINE. 12,917. Warren D. Huse and Leon C. Chase, Laconia, N. H.

KNITTING MACHINE Plating Device. 911,656. Emil A. Hirner, Allentown, Pa.

LOOM. Automatic Weft-Replenishing. 911,643. John C. Brooks, Paterson, N. J.

LOOM Filling-Exhaustion-Indicating Mechanism. 912,257. Chas. E. Nutting, Hopedale, Mass.

LOOM Filling-Exhaustion-Indicating Mechanism. 912,264. Alonzo E. Rhoades, Hopedale, Mass.

LOOM Weft Feeder. 911,672. Jonas Northrop, Hopedale, Mass.

Recent Textile Trade Marks Registered.

"Stag." Men's Dress, Negligee and Work Shirts. Hawley, Folsom & Ronimus, Boston, Mass.

"Sultan." Knit, Cotton and Woolen Underwear. Tootle, Wheeler & Motter Mercantile Co., St. Joseph, Mo.

"Prima Donna." Ladies' Suits. Adler & Ast, New York.

"Sheathbocker." A Combination Undergarment for Women. Chas. R. De Bevoise Co., Newark, N. J.

"The Berlin." Stockinet and Jersey Coats. Israel Goldberg. New York.

"Feather Brand." Upham Bros. & Co., Philadelphia, Pa.

"Rongeant." Silk Dress Goods. Valentine & Bentley Silk Co., Newton, N. J.

"Regal." Long-cloth. A. L. Reid & Co., New York.

"Piguart." Composition Collars and Cuffs. Wm. Heymann, New York.

"Fillete." Composition Collars and Cuffs. Wm. Heymann, New York.

"Fauna." Batiste. Tootle, Wheeler & Motter Mercantile Co., St. Joseph, Mo.

"The Very Best." Muslin Sheeting. Tootle, Wheeler & Motter Mechanile Co., St. Joseph, Mo.

"Gortel." Batiste. Tootle, Wheeler & Motter Mercantile Co., St. Joseph, Mo.

"Duchess." Sunbonnets, Ladies' Overshirts. Tootle, Wheeler & Motter Mercantile Co., St. Joseph, Mo.

"The Popular." Ladies' Shirt Waists. Nathan Gordon, New York.

"Bachelors' Friend." Stockings. Joseph Black & Sons Co., York, Pa.

"Innovation." Stockings. Jos. Black & Sons Co., York, Pa.

C. E. RILEY COMPANY

65 Franklin Street, .. BOSTON, MASS.

COTTON AND COTTON GOODS YARNS

DIRECT IMPORTERS OF EGYPTIAN COTTON

COTTON WOOLEN WORSTED MACHINERY

Thomas Broadbent & Sons,

Huddersfield, Eng.

PATENT DIRECT STEAM DRIVEN

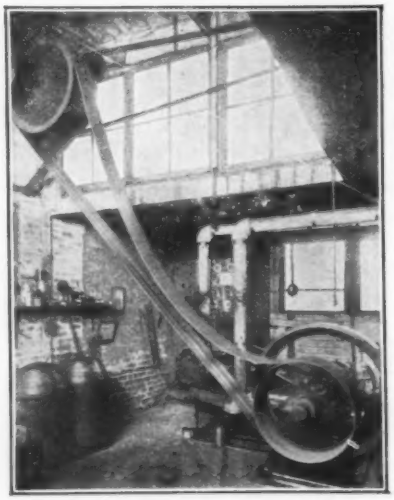
HYDRO-EXTRACTORS

OVER 3500 IN USE. ALSO ELECTRICALLY DRIVEN

SUSPENDED ON LINKS. REQUIRING NO EXPENSIVE FOUNDATIONS

C. E. RILEY COMPANY, Sole Agents 65 Franklin St., Boston, Mass.

Machines Kept in Stock in Boston



This main belt has had Cling-Surface for 4 months.

It is 8" single leather, from 22" iron to 30" wood pulleys, 10' centers, 1350 ft. P. M., 20 H. P. load which is very irregular and conditions damp.

Before using Cling-Surface the belt was dry and stiff and had to be shortened often, and oil cups on engine filled several times daily.

Now belt is very pliable, clean, never affected by dampness, carries full load with no slipping and runs two ft. slack, with maximum pulley contact and oil cups are filled in morning only.

Cling-Surface will do this work for every belt you have, save your power, oil, reduce friction, prevent influence of wet days and ensure maximum and regular output.

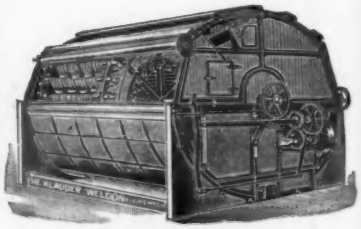
We guarantee results. Write us.

CLING-SURFACE COMPANY, 1051 Niagara Street BUFFALO N Y

BOSTON NEW YORK CHICAGO MEMPHIS ATLANTA, Etc.

RAW WOOL AND COTTON MACHINE.

MACHINES
sold on
2 MONTHS' TRIAL
YOU
TAKE
NO
RISK

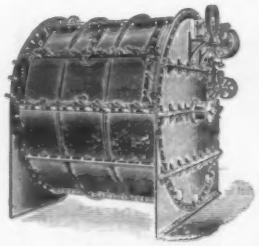


SKEIN AND SLUBBING MACHINE.

THE KLAUDER-WELDON DYEING MACHINE COMPANY

AMSTERDAM, N. Y. HUDDERSFIELD, ENGLAND.

Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.

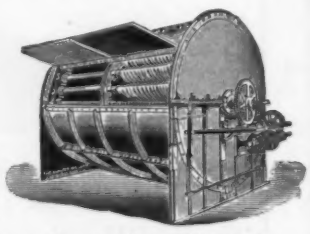


SULPHUR HOSIERY MACHINE.

Special Machines for Sulphur Colors

WILL EARN THEIR COST IN
LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY

Southern Agent, C. A. ROBERTS, Charlotte, N. C.



SULPHUR SKEIN MACHINE.

Buyers' Index

The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisements. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in the classification here given such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources. Advertisers whose names do not appear under desired headings will please notify the publishers. Such omissions are accidental, not intentional.

Air Moistening System.
American Moistening Co.
Bell Pure Air & Cooling Co.
Carrier Air Conditioning Co. of America.
Cramer, Stuart W.
Parks, G. M., Co.

Architects and Mill Engineers.
Dean, F. W.
Ferguson, John W.
Cramer, Stuart W.

Asphalt Tanks.
Scaife, W. B., & Sons.

Automatic Feeds for Cotton and Wool.
Bates & Robinson Machine Co.
Kitson Machine Co.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Schofield, Wm., Co.
Woonsocket Machine & Press Co.

Bale Ties.
Acme Steel Goods Co.

Baling Presses.
Boomer & Boschert Press Co.
Philadelphia Drying Mchy. Co.
Minnich Machine Works.
Sullivan Machinery Co.

Bandings.
——See under Yarns.

Baskets.
Lane, W. T., & Bro.

Beams (Steel).
Mossberg, Frank, Co.

Bearing Metals.
Dodge Mfg. Co.

Belting.
Burnham, E. E., Co.
Candy Belting Co.
Rhoads, J. E., & Sons.
Schierin Co., Chas. A.
Shultz Belting Co.
——See also Mill Supplies.

Belt Dressing.
Cling Surface Mfg. Co.
Dixon, Jas., Crucible Co.
Schierin, Chas. A., Co.
Shultz Belting Co.
Stephenson Mfg. Co.

Belt Lacing Machines.
Birdsboro Steel Foundry & Machine Co

Bindings.
——See Tapes and Braids.

Bleaching Kiers.
Arlington Mch. Wks. (Arthur Birch, prop.)
Philadelphia Drying Machinery Co.
Textile Finishing Machinery Co.

Bleaching Materials.
Bosson & Lane.
Carbondale Calcium Co.
Danker & Marston.
Roessler & Hasslacher Chemical Co.
Siemens & Halske.

Blowers and Blower Systems.
American Blower Co.
Cameron Machine Co.
Dean Bros. Steam Pump Works.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.
Schnitzler, Chas. H.
Sirocco Engineering Co.

Bobbins, Spools, Shuttles, Etc.
American Supply Co.
American Textile Specialty Mchy. Co.
Leigh, Evan A.
Lestershire Spool & Bobbin Co.
Mossberg, Frank, Co.
Tebbets, E. L., & Co.
Wilson & Co.

Bobbin Winders.
Lever, Oswald Co.
Universal Winding Co.

Boiler Inspection and Insurance.
——See Steam Boiler Insurance.

Boilers.
——See Steam Boilers.

Boxes, Cloth Boards, Etc.
Pearson, J. T.

Box Strapping.
Acme Steel Goods Co.

Braiding Machinery.
Mason Mfg. Co.
New England Butt Co.
Textile Machine Works.

Braids.
——See Tapes, Braids and Edgings.

Brass Hinges.
Root, C. J., Co.

Bridges.
Scaife, W. B., & Sons.

Brushers.
——See Napping Machines.

Brushes.
Felton, S. A., & Son Co.
Mason Brush Works.

Burr Pickers.
Curtis & Marble Machine Co.
Sargent's, C. G., Sons.
Smith & Furbush Machine Co.

Calico Printers' Machinery and Supplies.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., & Sons Co.
Taunton-New Bedford Copper Co.
Textile Finishing Mchy. Co.
——See also Dyeing, Bleaching, Machinery, etc.

Canvas Baskets.
Lane, W. T., & Bro.

Caps.
Calder Machine Works.

Carbonizing Machinery.
Birch Bros., Somerville Machine Wks.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Schuchardt & Schutte.
Tolhurst Machine Works.

Card Clothing.
Ashworth Bros.
Bates & Robinson Machine Co.
Crabb, Wm., & Co.
Howard Bros. Mfg. Co.
Leigh, Evan A.
Richards, Atkinson & Haserick.
Riley, C. E., Company.

Carded Cotton.
Blaisdell, S., Jr., Company.

Card Feeds.
——See Automatic Feeds.

Card Grinding Machinery.
Entwistle, T. C., Co.
Leigh, Evan A.
Riley, C. E., Company.
Smith & Furbush Machine Co.
Richards, Atkinson & Haserick.

Carders' Tools.
Brown, Wm. H., Co.

Carpet Machinery.
Altemus, Jacob K.
Curtis & Marble Machine Co.
Philadelphia Textile Machinery Co.
Smith & Furbush Machine Co.

Castings.
Farrel Foundry and Machine Co.
Schofield, Wm., Co.

Cell Driers.
Cell Drier Machine Co.

Cement Pans.
Scaife, W. B., & Sons.

Chemicals.
Harding, Fancourt & Scull.
Roessler & Hasslacher Chemical Co.

Chemists.
Little, Arthur D.
McKenna, Dr. Chas. F.

Cling Surface.
Cling Surface Mfg. Co.

Clocks.
Nanz, T., Clock Co.
Pettes & Randall Co.

Cloth Boards.
Chaffee Bros.
Pearson, J. T.
Richardson Brothers.

Cloth Cutting Machinery.
Adams, A. L.
Cameron Machine Co.

Cloth Expanders.
American Finishing Machinery Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Leyland, Thomas, & Co.
Textile Finishing Machinery Co.

Clutches.
American Tool & Machine Co.
Dodge Mfg. Co.
Hunter, James, Machine Co.
Mossberg Wrench Co.

Coal.
Darrow Mann Co.

Combs (Wool and Cotton).
Hood, R. H., Company.
Jefferson, Edward & Brother.
Leigh, Evan A.
Philadelphia Textile Machinery Co.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Stewart & Sons.

Condensers.
Dean Bros. Steam Pump Works.

Conditioning of Textile Fabrics.
New York Silk Conditioning Works.

Conveying Systems.
Dodge Mfg. Co.
Schnitzler, C. H.
Sturtevant, B. F., Co.

Cop Machinery.
Eppler, John, Mach. Works.

Cop Spindles.
American Textile Specialty Mchy. Co.
Hall, F. A. & P.

Cop Tubes.
American Textile Specialty Mchy. Co.
Hall, F. A. & P.
——See Paper Tubes.

Copper Print Rollers.
Taunton-New Bedford Copper Co.

Coppersmiths.
Badger, E. B., & Sons Co.

Copper Work for Dyers.
Badger, E. B., & Sons Co.
Butterworth, H. W., & Sons Co.
Harrington & King Perforating Co.
Textile Finishing Machinery Co.

Alphabetical Advertising Index, with page numbers, follows this list.

Corrugated Iron and Steel.
Scaife, W. B., & Sons.

Cotton.
Blaisdell, S., Jr., Co.
Charles, W. B.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Schwartz, L. H. A., & Co.

Cotton Machinery.
Altemus, Jacob K.
American Textile Specialty Mchy. Co.
Ashworth Bros.
Bates & Robinson Machine Co.
Butterworth, H. W., & Sons Co.
Cramer, Stuart W.
Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Dixon Lubricating Saddle Co.
Draper Company.
Easton-Burnham Co.
Elliott & Hall.
Entwistle, T. C., Co.
Firth, William, Co.
Howard & Bullough American Mach. Co.
Kilburn, Lincoln & Co.
Kip-Armstrong Co.
Kitson Machine Co.
Klauder-Weldon Dyeing Machine Co.
Leigh, Evan A.
Lowell Machine Shop.
Mason Machine Works.
McKerrow, H. G., Co., Ltd.
Metallic Drawing Roll Co., The.
Palmer, I. E., Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Providence Machine Co.
Richards, Atkinson & Haserick.
Riley, C. E., Company.
Saco & Pettee Machine Shops.
Schofield, Geo. L.
Schwartz, L. H. A., & Co.
Smith & Furbush Machine Co.
Stafford Co., The.
Textile Finishing Machinery Co.
Textile Machinery Co.
Whitin Machine Works.
Woonsocket Machine & Press Co.

Cotton Openers and Lappers.
Howard & Bullough American Mach. Co.
Kitson Machine Co.
Leigh, Evan A.
Richards, Atkinson & Haserick.
Riley, C. E., Company.

Cotton Softeners.
Bosson & Lane.
Burckhardt & Co.
Danker & Marston.
Harding, Fancourt & Scull.

Cotton Waste.
Blaisdell, S., Jr., Co.
Charles, W. B.
Schofield, Edwin F.

Counting Machines.
Durbrow & Hearne Mfg. Co.
Root, C. J., & Co.
Schuhardt & Schutte.

Crayons.
Dixon, Jos., Crucible Co.
Lowell Crayon Co.

Creosote.
Carbolineum Wood Preserving Co.

Cutting Machines.
Adams, A. L.
Cameron Machine Co.
Durbrow & Hearne Mfg. Co.
Oswego Machine Works.

Cylinder Oil (Superheated Steam).
Power Specialty Co.

Dextrine.
Stein, Hirsh & Co.

Dobbies.
Crompton & Knowles Loom Works.
Kilburn, Lincoln & Co.
Stafford Co., The.

Dobby Chain.
Nuttall, George.

Doupe Cutters.
Cameron Machine Co.

Draughtsmen.
Cameron Machine Co.

Drawing Rolls.
Jefferson, Edward & Brother.
Hood, R. H., Company.
Metallic Drawing Roll Co., The.

Drying Machinery.
American Blower Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., & Sons Co.
Cell Drier Machine Co.
Hunter, Jas., Machine Co.
Jefferson, Edward & Brother.
Kenyon, D. R., & Son.
Philadelphia Drying Machinery Co.
Sargent's, C. G., Sons.
Schwartz, L. H. A., & Co.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Drying Boards.
Bull, William C.
Pearson, J. T.
Philadelphia Drying Mchy. Co.

Dusters.
——See Wool and Waste Dusters.

Dust Collectors.
American Blower Co.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Dyers, Bleachers and Finishers.
Brophy's, T., Sons.
Davidson, J. F.
Firth & Foster Co.
Germania Dye Works.
Globe Dye Works Co.
Home Bleach & Dye Works.
Hopkinson Dyeing & Textile Works.
Lorimer's, The Wm. H., & Sons Co.
Pawtucket Dyeing & Bleaching Co.
Peerless Co.
Rowland, Samuel.
Solway Dyeing & Textile Co.
Utica Willowvale Bleaching Co.
Western Thread & Dye Works.

Dyeing, Drying, Bleaching and Finishing Machinery.
American Blower Co.
American Laundry Mchy. Mfg. Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., & Sons Co.
Cell Drier Machine Co.
Curtis & Marble Machine Co.
Entwistle, T. C., Co.
Gessner, David.
Heathcote, John, & Son.
Hopkins Machine Works.
Hussong Dyeing Machinery Co.
Hunter, James, Machine Co.
Kenyon, D. R., & Son.
Klauder-Weldon Dyeing Machine Co.
Klipstein, A., & Co.
Leigh, Evan A.
Leyland, Thos., & Co.
National Laundry Machinery Co.
Parks & Woolson Machine Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Rodney Hunt Mach. Co.
Schwartz, L. H. A., & Co.
Schuchardt & Schutte.
Smith, Drum & Co.
Steel Roll Machine Co.
Sturtevant, B. F., Co. (Drying).
Taylor & Fenn Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Dye House Cans.
Hill, James, Mfg. Co.

Dye House Trucks.
Bailey, Frank.

Dye Sticks.
Bailey, Frank.
Haedrich, E. M.
Klauder-Weldon Dyeing Machine Co.

Dye Tubs.
——See Tanks, Tubs and Vats.

Dyestuffs and Chemicals.
American Dyewood Co.
Arabol Manufacturing Co.
Atteaux, F. E., & Co.
Badische Co.
Berlin Aniline Works.
Bischoff & Co.
Bosson & Lane.
Carbondale Calcium Co.
Cassella Color Co.
Danker & Marston.
Farbenfabriken of Elberfeld Co.
Kalle & Co.
Ford, J. B., Co.
Geisenheimer & Co.
Jamaica Dyewood & Chemical Co.
Johnson, Chas. A., & Co.
Klipstein, A., & Co.
Leyland, Thos., & Co.
Metz, H. A., & Co.
Roessler & Hasslacher Chemical Co.
Stein, Hirsch & Co.
Sykes, Walter F., & Co.
Thayer, Ed. M., & Co.
Young, J. S., & Co., Ltd.

Dynamos.
——See Electric Lighting.

Edgings.
——See Tapes, Braids and Edgings.

Electrical Construction.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Company.
Watson-Flagg Engineering Co.
Westinghouse Electric & Mfg. Co.

Electrical Heating Devices.
Crocker-Wheeler Co.
General Electric Co.

Electric Driven Pumps.
Dean Bros. Steam Pump Works.
General Electric Co.

Electric Fans.
American Blower Co.
Crocker-Wheeler Co.
General Electric Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sturtevant, B. F., Co.
Watson-Flagg Engineering Co.
Westinghouse Electric & Mfg. Co.

Electric Hoists.
Crocker-Wheeler Co.
General Electric Co.

Electric Lighting.
American Blower Co.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Motors.
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Electrolyzer.
National Laundry Machinery Co.

Elevators.
Salem Elevator Works.

Embossing Machines.
Cameron Machine Co.

Embroidery Machines for Hosiery.
Durbrow & Hearne Mfg. Co.

Employees' Time Recorders.
Pettes & Randall Co.

Engines.
——See Steam Engines.

Engine Repairs.
Fishkill Landing Machine Co.

Exhaust Heads.
Sturtevant, B. F., Co.
Power Specialty Co.

Fans—Exhaust and Ventilating.
——See Ventilating Apparatus.

Feed Water Heaters.
Scaife, W. B., & Sons.

Feed Water Pumps.
Dean Bros. Steam Pump Works.
Goulds Mfg. Co.

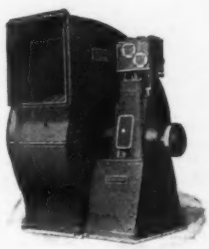
Feed Water Purifiers.
Dodge Mfg. Co.
Scaife, W. B., & Sons.

Alphabetical Advertising Index, with page numbers, follows this list.

Why Buy
Sturtevant Blowers
and
Exhausters

BECAUSE Sturtevant Motors, Engines and Turbines are **especially designed** for **driving blowers** and **exhausters.**

BECAUSE the B. F. STURTEVANT CO. is the only fan company making motors and turbines.



BECAUSE the B. F STURTEVANT CO. is the only fan company that makes positive or rotary blowers and exhausters.

BECAUSE Sturtevant apparatus is selected and installed by Engineers, not by guesswork of salesmen having no knowledge of Engineering.

Ask for Bulletin No. 158.

B. F. STURTEVANT CO., BOSTON, MASS.

General Office and Works, Hyde Park, Mass.

NEW YORK PHILADELPHIA CHICAGO CINCINNATI LONDON

Designers and Builders of Heating, Ventilating, Drying and Mechanical Draft Apparatus; Fan Blowers and Exhausters, Rotary Blowers and Exhausters; Steam Engines, Electric Motors and Steam Turbines; Pneumatic Separators, Fuel Economizers, Forges, Exhaust Heads, Steam Traps, etc. 724

Feeds.
——See Automatic Feeds.
Feed Water Regulators.
Berry Engineering Co.
Felt Hardeners.
Farrel Foundry and Machine Co.
Felting Machinery.
Farrel Foundry and Machine Co.
Fender Boards.
Case Bros.
Filters.
Hungerford & Terry.
Norwood Engineering Co.
Scaife, W. B., & Sons.
Finishing Machinery.
——See Dyeing, Drying, Bleaching and Finishing.
Fire Brick.
Borgner, Cyrus, Co.
Fire Extinguishers.
Badger, E. B., & Sons Co.
Fire Hose.
Eureka Fire Hose Co.
Fire Hydrants.
Norwood Engineering Co.
Fire Insurance.
Home Insurance Co.
Fire Proof Doors and Windows.
Badger, E. B., & Sons Co.
Flax, Tow, Hemp and Jute Machinery.
Fairbairn-Lawson-Combes-Barbour, Ltd.
Fluted Rolls.
Bates & Robinson Machine Co.
Hood, R. H., Company.
Leigh, Evan A.
Jefferson, Edward & Brother.
Riley, C. E., Company.
Thurston, A. G., & Son.
Flyers.
Bodden, Wm., & Son, Ltd.
Calder Machine Works.
Hopkins Machine Works.
Jefferson, Edward & Brother.
Leigh, Evan A.
Textile Machinery Co.
Fly Wheels.
Dodge Mfg. Co.
Forges.
Sturtevant, B. F., Co.
Friction Chains.
Oneida Community, Ltd.
Friction Clutches.
——See Clutches.
Friction Cones.
Evans Friction Cone Co.
Fuel.
Darrow Mann Co.
Fuel Economizers.
Sturtevant, B. F., Co.
Fulling Mills for Woolen Goods.
Hopkins Machine Works.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.
Rodney Hunt Mach. Co.
Furnaces (Automatic Smokeless).
Murphy Iron Works.
Garnetts.
Bates & Robinson Machine Co.
Hunter, James, Machine Co.
Leigh, Evan A.
Smith & Furbush Machine Co.
Gas Blowers and Exhausters.
American Blower Co.
Sturtevant, B. F., Co.
Gaskets (Superheated Steam).
Power Specialty Co.
Gassing Machines.
Stubbs, Joseph.
Gauges.
Crosby Steam Gage & Valve Co.
Walworth Manufacturing Co.
Gears.
Dodge Mfg. Co.
Farrel Foundry and Machine Co.
New Process Raw Hide Co.
Gear Cutting.
Farrel Foundry and Machine Co.
Gear Cutting Machine.
Whiton, The D. E., Co.
Generating Sets.
American Blower Co.
Buffalo Forge Co.
General Electric Co.
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Geyser Water Heater.
Sargent's Sons, C. G., Corp.
Greases.
N. Y. & N. J. Lubricant Co.
Harness Twine.
Moore C., & Co.
Harness and Frames.
Steel Heddle Mfg. Co.
Garland Mfg. Co.
Heating.
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Heddles.
Howard Bros. Mfg. Co.
Richards, Atkinson & Haserick.
Steel Heddle Mfg. Co.
Hoisting Apparatus.
Economy Engineering Co.
Hosiery Boards.
Pearson, J. T.
Philadelphia Drying Machinery Co.
Hosiery Labels.
Kaumagraph Company.
Humidifying Apparatus.
American Moistening Co.
Bell Pure Air & Cooling Co.
Carrier Air Conditioning Co. of America.
Cramer, Stuart W.
Parks, G. M., Co.
Hydraulic Rams.
Power Specialty Co.
Walworth Mfg. Co.
Hydro Extractors.
American Laundry Mchy. Mfg. Co.
American Tool & Machine Co.
Broadbent, Thomas, & Sons.
Dienelt & Eisenhardt, Inc.
Riley, C. E., Company.
Richards, Atkinson & Haserick.
Textile Finishing Machinery Co.
Tolhurst Machine Works.
Ice Machines.
Remington Machine Co.
Insulating and Braiding Silks.
Sauquoit Silk Mfg. Co.
Insurance (Casualty, Fire and for Loss of Profits.)
Home Insurance Co.
Investments.
Cross Creek Coal Co.
Ironing Machines for Knit Goods.
American Laundry Machinery Mfg. Co.
Iron Glue.
Ament, H. B.
Jacquards.
Halton's, Thomas, Sons.
Jacquard Cards.
Case Bros., Inc.
Knit Goods, Edgings, Trimmings, Etc.
Chapin, Geo. W.
Charles, W. B.
Cheney Bros.
Friedberger-Aaron Mfg. Co.
Krout & Fite Mfg. Co.
Weimar Bros.
Knit Goods, Finishing Machines Crochet, Etc.
American Laundry Machinery Mfg. Co.
Hoffman, U. S.
Merrow Machine Co., The.
Nye & Tredick Co.
Scott & Williams.
Union Special Machine Co.
Knitting Machine Cylinders.
Parton & O'Neill.
Stafford & Holt.
Knitting Machinery.
Ross Knitting Machine Co.
Brinton, H., & Co.
Claes & Flentje.
Climax Machine Co.
Cooper, Chas.
Crane Mfg. Co.
Dubied, Edouard, & Co.
Eppler, John, Mach. Works.
Excelsior Knitting Machine Mfg. Co.
General Machine Works.
Gormly, Robt. W., & Co.
Grosser Knitting Machine Co.
Hemphill Mfg. Co.
Jenckes, E., Mfg. Co.
Lamb Knitting Mach. Mfg. Co.
Leckie, Jas., & Son.
Leighton Machine Co.
Mayo, Geo. D., Knitting Machine Co.
Mayo Knitting Machine & Needle Co.
National Automatic Knitter Co.
Nye & Tredick Co.
Parton & O'Neill.
Scott & Williams.
Stafford & Holt.
Standard Machine Co.
Taylor, James.
Tompkins Bros. Co.
Walther, Otto.
Wildman Mfg. Co.
Knitting Needles and Supplies.
Breedon's, Wm., Son.
Brinton, H., & Co.
Continental Latch Needle Company.
Cooper, Chas.
Corey, Wm., Co.
Crane Mfg. Co.
Dodge Needle Co.
Excelsior Needle Co.
Grosser Knitting Machine Co.
Ives, L. T., Co.
Lamb Knitting Machine Mfg. Co.
Keystone Latch Needle Co.
Mayo Knitting Machine & Needle Co.
Wardwell Needle Co.
Lace Dressing Plant.
Simms, Geo., & Sons.
Lamps, Electric.
Cooper Hewitt Electric Co.
General Electric Co.
Westinghouse Electric & Mfg. Co.
Logs (for Rolls).
Hartwell, Geo. E.
Loom Pickers.
Garland Mfg. Co.
Looms.
Crompton & Knowles Loom Works.
Draper Company.
Kilburn, Lincoln & Co.
Leigh, Evan A.
Lowell Machine Shop.
Stafford Co., The.
Mason Machine Works.
Richards, Atkinson & Haserick.
Whitin Machine Works.
Loopers.
Beattie Manufacturing Co.
Hepworth, John W., & Co.
Leighton Machine Co.
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Borne, Scrymser Co.
Dixon, Jos., Crucible Co.
N. Y. & N. J. Lubricant Co.
Lubricators.
Detroit Lubricator Co.
Walworth Mfg. Co.
Lumpers.
Gerry, George, & Son.
Schofield, Wm., Co.
Machine Designers.
Adams, A. L.
Cameron Machine Co.
Machinery Dealers.
Jefferson, Ed., & Bro.
Lamb, J. K., Textile Mach. Co.
Schofield, Geo. L.
Taylor, James.
Machinists.
Adams, A. L.
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Cameron Machine Co.
Machinists' Tools.
Whiton, The D. E., Co.
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Marking Pots.
Bradley, A. J.
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Curtis & Marble Machine Co.
Elliott & Hall.

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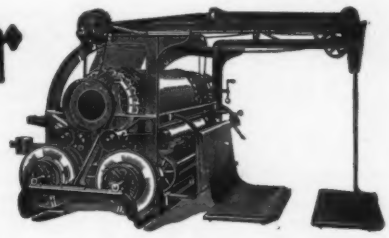
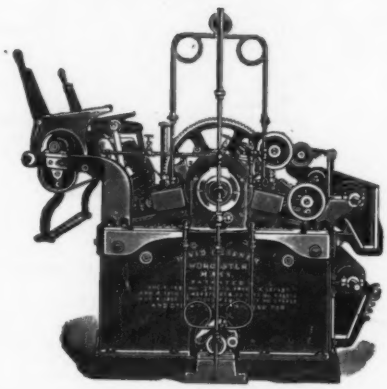
David Gessner

Worcester, Mass.

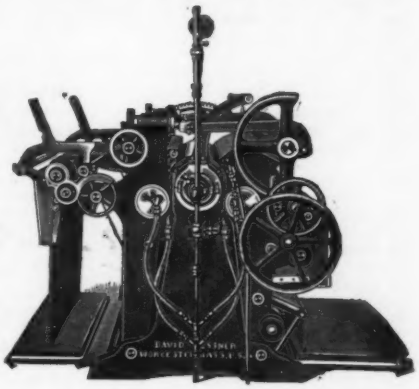




Latest Improved Cloth Finishing Machinery

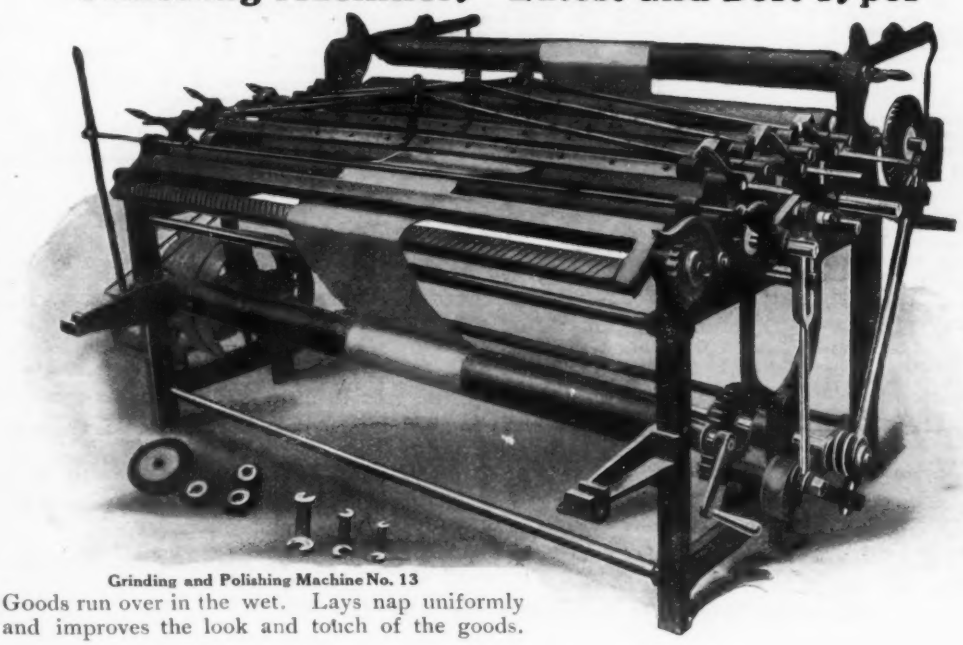
—

Napping Machines and Presses a Specialty



Schuchardt & Schutte, 90 West St., New York

Finishing Machinery—Latest and Best Types



Grinding and Polishing Machine No. 13

Goods run over in the wet. Lays nap uniformly and improves the look and touch of the goods.

Mechanical Draft.
American Blower Co.
Sirocco Engineering Co.
Sturtevant, B. F., Co.

Mechanical Draughtsmen.
Sturtevant, B. F., Co.
Cameron Machine Co.

Mechanical Engineers.
American Blower Co.
Dodge Mfg. Co.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Mechanical Stokers.
American Ship Windlass Co.
Murphy Iron Works.

Mercerizers.
Globe Dye Works Co.
Home Bleach & Dye Works.
Lorimer, Wm. H., Sons Co.

Mercerizing Machinery.
Butterworth, H. W., & Sons.
Klauder-Weldon Dyeing Machine Co.
Schwartz, L. H. A., & Co.
Smith, Drum & Co.
Textile Finishing Machinery Co.

Metallic Fire-proof Window Frames and Sashes.
Badger, E. B., & Sons Co.

Metallic Packing.
Power Specialty Co.

Mill Architects.
—See Architects and Mill Engineers.

Mill Builders and Engineers.
Ferguson, John W.

Mill Supplies.
American Supply Co.
Bamford & Smith.
Buckley's, Benjamin, Sons.
Burnham, E. E., & Co.
Crabb, Wm., & Co.
Crosby Steam Gage and Valve Co.
Easton-Burnham Co.
Eureka Fire Hose Co.
Garland Mfg. Co.
Jefferson, Ed., & Bro.
Lane, W. T., & Bro.
Leigh, Evan A.
Murphy, E. W., & Co.
N. Y. & N. J. Lubricant Co.
Philadelphia Drying Machinery Co.
Pratt, R. C.
Riley, C. E., Company.
Richards, Atkinson & Haserick.
Richardson Bros.
Schierin, Chas. A., Co.
Shaw, Victor, Ring Traveler Co.
Stephenson Mfg. Co.
Sweet & Doyle.
Thurston, A. G., & Son.
Vandegrift, Elias T.
Walworth Manufacturing Co.

Motors (Electric).
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Watson-Flagg Engineering Co.
Westinghouse Electric & Mfg. Co.

Napping Machinery.
Birch Bros., Somerville Machine Wks.
Cocker Machinery Co.
Curtis & Marble Machine Co.
Gessner, David.
Leigh, Evan A.
Parks & Woolson Machine Co.

Nells (Silk).
Ryle, Wm., & Co.

Non-Fluid Oils.
N. Y. & N. J. Lubricant Co.

Numbering Machines.
Durbrow & Hearne Mfg. Co.

Oil Cups.
Walworth Manufacturing Co.

Oils.
Borne, Scrymser Co.
Burckhardt & Co.
Harding, Fancourt & Scull.
Murphy, E. W., & Co.
New York & New Jersey Lubricant Co.
Stephenson Mfg. Co.

Oil Stencil and Press Board Paper.
Bradley, A. J.

Overseaming Machines.
Merrow Machine Co.
Singer Sewing Machine Co.

Packings (Metallic).
Power Specialty Co.

Paints (Wood Preserving).
Carbolineum Co.

Pantagraphs for Mill Engraving.
Johnson, C. A., & Co.

Paper.
Merwin Paper Co.
Richardson Bros.

Paper Boards.
Merwin Paper Co.

Paper and Cloth Slitters.
Cameron Machine Co.

Patent Solicitors.
Crosby & Gregory.
Foulds & Galland.
Howson & Howson.

Perforated Metals.
Harrington & King Perforating Co.
Hopkins Machine Works.

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Pinking Machines.
Durbrow & Hearne Mfg. Co.
Oswego Machine Works.

Pipes and Fittings.
Scaife, W. B., & Sons.
Walworth Manufacturing Co.

Pneumatic Conveying.
—See Ventilating.

Portable Hoists.
Economy Engineering Co.

Power Transmission Machinery.
Almond, T. W., Mfg. Co.
American Pulley Co.
Cell Drier Machine Co.
Cresson, Geo. V., Company.
Dodge Mfg. Co.
Evans, G. Frank.
Farrel Foundry and Machine Co.
Hunter, Jas., Machine Co.
Kilburn, Lincoln & Co.
Oneida Steel Pulley Co.
Philadelphia Drying Machinery Co.
Reeves Pulley Co.
Saginaw Manufacturing Co.
Schofield, Wm., Co.
Sellers, William, & Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Preparatory Machinery (Cotton).
Howard & Bullough Am. Machine Co.
Kitson Machine Co.
Leigh, Evan A.
Riley, C. E., Company.
Saco & Pettee Machine Shops.

Preservatives.
Carbolineum Wood Preserving Co.

Presses.
Automatic Machine Works.
Boomer & Boschert Press Co.
Butterworth, H. W., & Sons Co.
Curtis & Marble Machine Co.
Gessner, David.
Hart, Charles.
Hoffman, U. S., Co.
Minnich Machine Works.
Phila. Drying Machinery Co.
Spence & Rideout.
Sullivan Machinery Co.
Textile Finishing Machinery Co.
Woonsocket Machine & Press Co.

Press Boards.
Case Bros., Inc.

Press Papers.
Merwin Paper Co.
Philadelphia Drying Mchy. Co.
Richardson Brothers (Importers and Dealers).

Pressure Regulators.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Producer Gas Power Plants.
Cameron Machine Co.

Pulley Covering.
Warren Company.

Pulleys.
—See Power Transmission Machinery.

Pumps.
Dean Bros. Steam Pump Works.
Goulds Mfg. Co.
Lawrence Pump & Engine Co.
Philadelphia Drying Machinery Co.
Textile Finishing Machinery Co.

Pump Governors.
Crosby Steam Gage & Valve Co.
Dean Bros. Steam Pump Works.
Walworth Mfg. Co.

Purifying & Filtration Plants.
Dodge Mfg. Co.
Hungerford & Terry.
Norwood Engineering Co.
Scaife, W. B., & Sons.

Quillers.
Foster Machine Co.
Fayne, G. W., & Co.
Universal Winding Co.

Rag Pickers.
Schofield, Wm., Co.
Smith & Furbush Machine Co.

Raveling Machines.
American Raveler Co.

Raw Hide Gears.
New Process Raw Hide Co.

Reed and Harness Manufacturers.
American Supply Co.
Nuttall, George.
Stewart & Sons.
Walder, J.

Reducing Valves.
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Regulators (Pressure).
Crosby Steam Gage & Valve Co.
Walworth Mfg. Co.

Ribbon Cutters.
Cameron Machine Co.

Ribbons.
Cheney Bros.

Ring Travelers.
Shaw, Victor, Ring Traveler Co.

Roofing.
Parrett Mfg. Co.

Roller Leather.
Jefferson, Edward & Brother.

Roll Coverers.
Burnham, E. E., & Co.

Rolls (Brass, etc.).
Simms, Geo., & Co.

Rope.
Dodge Mfg. Co.

Rope Dressing and Preservative.
Cling-Surface Co.

Rope Transmission.
Cresson, Geo. V., Company.
Dodge Mfg. Co.

Roving Cans.
Hill, James, Mfg. Co.
Standard Fibre Co.

Sash Cord Braiders.
Mason Mfg. Co.

Scallop Machines.
Merrow Machine Co.

Schools.
International Correspondence Schools.
Lowell Textile School.
New Bedford Textile School.
Philadelphia Textile School.

Scleroscope for Metal Testing.
Shore Instrument & Mfg. Co.

Screens (Perforated Metal).
Harrington & King Perforating Co.

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Separators (Yarn).
Draper Co., The.

Sewing Machines and Supplies.
American Raveler Co.

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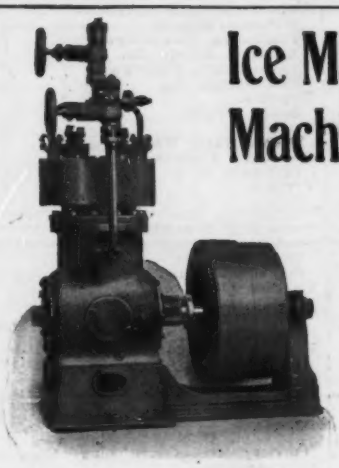

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&

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PHILADELPHIA OFFICE, THE ARCADE

Darrow-Mann Company

New River Consolidated Coal & Coke Co.'s

New River Coal

Nonpareil Bituminous . . All Rail and Tide Water
Gas Coal and Gas Slack . All Rail and Tide Water
Nos. One, Two and Three, Buckwheat

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Arlington Mch. Wks. (Arthur Birch, prop.)
Birch Bros., Somerville Machine Wks.
Curtis & Marble Machine Co.
Dinsmore Mfg. Co.
Fales, L. F.
Singer Sewing Machine Co.
Textile Finishing Machinery Co.
Union Special Machine Co.

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Shearing Machinery.
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Sheet Metal Work.
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Shell Rolls.
Thurston, A. G., & Son.

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—See Bobbins, Spools, Shuttles, Etc.

Silk Machinery.
Arlington Mch. Wks. (Arthur Birch, prop.)
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Leigh, Evan A.
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Richards, Atkinson & Haserick.
Textile Finishing Machinery Co.

Silk Mill Supplies.
Hall, I. A., & Co.

Silk Noils.
Fawcett, Hughes.

Singe Plates.
Butterworth, H. W., Sons Co.
Taunton, New Bedford Copper Co.
Textile Finishing Machinery Co.

Singeing Machines.
Automatic Machine Works.
Butterworth, H. W., Sons Co.
Curtis & Marble Machine Co.
Electro-Textile Co.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Smith, Drum & Co.
Stubbs, Joseph.
Textile Finishing Machinery Co.

Sizing, Starch and Gums.
American Diamalt Co.
Arabol Mfg. Co.
Corn Products Refining Co.
Danker & Marston.
Miller Mfg. Co.
New Brunswick Chemical Co.
Stein, Hirsch & Co.

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Drouve, G., Co.
Van Nostden, E., Co.

Slashers.
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Riley, C. E., Company.

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Dobbins Soap Mfg. Co.
Miller Mfg. Co.

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Cameron Machine Co.

Spindles.
Hamford & Smith.
Bodden, Wm. & Son, Ltd.
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Hopkins Machine Works.
Jefferson, Edward & Brother.
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Richards, Atkinson & Haserick.
Vandegrift, Elias T.

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Bamford & Smith.
Calder Machine Works.
Riley, C. E., Company.
Richards, Atkinson & Haserick.
Vandegrift, Elias T.

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Dixon Lubricating Saddle Co.

Spinning Rings.
Draper Company.
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Howard & Bullough American Machine Co.
Whitinsville Spinning Ring Co.

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Buckley's, Benjamin, Sons.
Jefferson, Edward & Brother.

Spools.
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Draper Company.
Easton & Burnham Machine Co.
Lindsay, Hyde & Co.
Lowell Machine Shop.
Payne, George W., & Co.

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Scaife, W. B., & Sons.

Steam Boilers.
Scaife, W. B., & Sons.

Steam Engines.
American Blower Co.
Fishkill Landing Machine Co.
Providence Engineering Works.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.

Steam Heating.
American Blower Co.

Steam Jacket Kettles.
Badger, E. B., & Sons Co.

Steam Pumps.
Dean Bros. Steam Pump Works.
Goulds Manufacturing Co., The.
Walworth Mfg. Co.

Steam Specialties.
Berry Engineering Co.
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93 Broad St., Boston
Private Telephone Exchange, 7080 Main
CHEMICAL CONTROL OF MATERIAL AND PROCESSES
Specialists in
Chemistry of Cellulose and Fibres

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(We give below in full the famous Barrett Specification)

The Barrett Specification

FOR STANDARD GRAVEL OR SLAG ROOFING (Over Boards) . . . .

(To follow description of Roof Sheathing

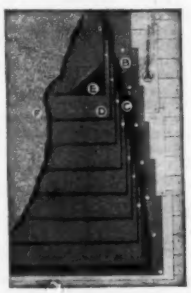
OVER the foregoing shall be laid a Coal Tar Pitch, Felt and Gravel or Slag Roof.

There shall be used one (1) thickness of sheathing paper or unsaturated felt, five (5) thicknesses of Barrett Specification Felt weighing not less than fourteen (14) pounds per one hundred (100) square feet, single thickness; and not less than one hundred and twenty (120) pounds of Barrett Specification Pitch and not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag from ¼ to ⅝ inch in size, free from dirt, per one hundred (100) square feet of completed roof.

The material shall be applied as follows:

First—Lay the sheathing or unsaturated felt (A) lapsing each sheet one (1) inch over the preceding one.

Second—Lay two full thicknesses of tarred felt (B) lapping each sheet seventeen (17) inches over the preceding one, and nailing as often as may be necessary to hold the sheets in place until remaining felt is applied.



Third—Coat the entire surface of this two ply with hot pitch (C) mopped on uniformly.

Fourth—Lay three (3) full thicknesses of felt (D), lapping each sheet twenty-two (22) inches over the preceding one, mopping with hot pitch (E) the full width of the twenty-two (22) inch lap between the plies, so that in no case in the last three plies shall felt touch felt. Such nailing as is necessary shall be done so that all nails will be covered by not less than two (2) plies of felt.

Fifth—Spread over the entire surface of the roof a uniform coating of pitch, into which, while hot, imbed the gravel or slag (F). The gravel or slag must in all cases be dry.

Barrett Specification PITCH B THIS END UP

Barrett B Specification TARRED FELT

NOTE—The above specification is designed for roofs having a pitch not exceeding three (3) inches to the foot. For steeper surfaces we will submit special Specifications upon request. A special Specification, when roof is to be laid over concrete, may be had by addressing the nearest office of

The BARRETT MANUFACTURING CO.

New York Philadelphia Chicago Boston Cleveland
Pittsburg Cincinnati Kansas City Minneapolis
New Orleans St. Louis London, Eng.

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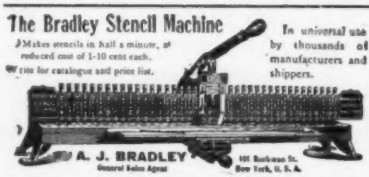

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259 Forest Street, FALL RIVER, MASS.

HOSIERY CLIPS WANTED

White, also colors such as blue and white, brown and white and black and white twist. Can also use yarn waste or ravellings, white or colored. Manufacturers, dealers and brokers are invited to send samples with full details. Also in the market for solid black hosiery clips.

C. W. BECKER, Agt.,
Waste Dealer,
Amsterdam, N. Y.

Wants, For Sale, Etc.

Rates 15 cents a line per issue when replies are sent in care of TEXTILE WORLD RECORD to be forwarded. If replies go direct to advertiser the rate is 10 cents per line per issue. Count seven words to a line and include side head and address. Cash must accompany the order for these ads. If such ads. are "displayed" the rate is $2.00 per inch single column each time. The publishers reserve the right to reject any advertisement.

Salesman. Salesman located in Philadelphia who has called on hosiery and underwear mills all over the country, intimately acquainted with Pennsylvania and Philadelphia trade, would like to connect with cotton yarn house. Address W. R. D., Care Textile World Record.

For Sale Very Cheap. An almost new 7 cut, 32 inch wide Jacquard flat knitting machine. Address M. Miller, 851 St. Antoine St., Detroit, Mich.

WANTED

Fixers for "Acme" Knitters,

Address ACME. Care Textile World Record, Boston, Mass.

WANTED BY COTTON MACHINERY BUILDERS

Energetic, reliable, practical man, who understands cotton spinning and manufacturing; one preferred with good technical education who has had experience as master mechanic, and thoroughly understands power plants and electricity. Address C. M. B., care Textile World Record, Boston, Mass.

WANTED

The services of an Assistant Superintendent and Designer. Must be thoroughly acquainted with all workings of the mill and able to produce results. Address Cleveland Woolen Mills, Cleveland, Tenn.

FOR SALE OR TO LET

3-Story Brick Knitting Mill for manufacturing children's ribbed underwear. Capacity 250 dozen per day. Fully equipped and ready to start up. Good location. Plenty of help. Building and machinery for sale or open for negotiations. H. W. OTIS & CO.,

Room 18, 39 East 42nd St., New York City.

WHAT DO YOU DO WITH YOUR ODD LOTS OF YARN?

Send samples and lowest cash price to

EDWARD DEVLIN, Yarn Dealer

1743 Hope Street, Philadelphia, Penna.

who buys this class of goods and pays best prices.

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OILS, CHEMICALS and SOAPS

Tuscan Softener, Turkey Red Oil, (all grades) Soluble Oils and Olive Oil.

1095 Germantown Ave.. PHILADELPHIA

Hosiery Mill Manager or Supt. Now employed desires to make a change for satisfactory reasons. Has been in the business for 22 years, 6 of which was in cotton mill. Is competent to manage entire business from office to manufacturing. Is a practical dyer of aniline and sulphur blacks. Address O. M. A., Care Textile World Record, Boston, Mass.

Wanted. A man in small mill to run fulling mills and oversee scouring and drying on blankets, flannels and cassimeres. S. D., Care Textile World Record.

Wanted a capable man on the Jenckes Invincible Full Automatic Hosiery Knitters, Hepworth Loopers. Good pay and steady work to the right man. Address J. I. F., care Textile World Record, Boston, Mass.

WANTED

By well known agents, the Agency for Hosiery and Knit Goods from good mill to sell from Denver west to the coast to the jobbing and large department store trade, on a commission basis:—address Caro & Upright, 717 Market St., Rooms 510 and 510½ San Francisco, Cal.

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Garnett machines 60 inches wide with one, two or three cylinders each.

Garnett machines with Blamire feeds, self feeds, etc., suitable for cotton batting or cotton felt.

Shredding machines.

Fearnaught pickers.

Cotton batt presses.

48 inch cards with three or four cards per set, Bramwell and Apperly feeds, Barker rubs, to take off 60 ends with mules to follow.

Portable hoisting machine for tiering bales.

Manufacturers, dealers or brokers having such machinery to offer may send your description to post office box 88, Amsterdam, N. Y.

FANCY COLORED SWEATER YARNS FOR IMMEDIATE SHIPMENT.

54142	Single	Navy,	about	56 lbs.	on Cones	54147	3 ply	Black,	about 409 lbs. on Cones
54143	"	Scarlet,	"	1081 lbs.	"	54148	2 ply	"	" 147 lbs. "
54144	"	Royal Blue,	"	686 lbs.	"	54149	2 ply	Scarlet,	" 188 lbs. "
54145	"	White.	"	176 lbs.	on Skeins	54151	2 ply	Royal Blue,	" 819 lbs. "
54146	"	Black,	"	109 lbs.	"	54708	Single	Black,	" 27 lbs. "
54146	"	"	"	20 lbs.	on Cones	54709	"	"	" 439 lbs. "

Small windings and prices will be furnished to interested parties, either manufacturers, brokers and dealers.

C. W. BECKER, AGT., WASTE DEALER,

Address Dept. 27. AMSTERDAM, N. Y.

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One (1) Set Sargent's Wool Washers, 4 bowls.
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One (1) W. B. Lee Comb Baller or Punch.
Two (2) Taylor, Wordsworth Comb Ballers.
Two (2) Taylor, Wordsworth Comb Ballers, old style.
Three (3) Noble Combs.
A number of combing gill boxes. ⅜", 7/16", ½", ⅝", ¾" and ⅞" pitch of screws.
A number of Single Balling Gill Boxes, ⅜", 7/16", ½" and ⅝" screws.
A number of Double Balling Gill Boxes, ⅜", 7/16", ½" screws.
Can Gill Boxes for Drawing, ⅜", 7/16", and ½" screws.
Two Spindle Gill Boxes, ⅜", 7/16", ½" and 11/16" screws.
Five (5) 2-Spindle Drawing Frames, 4" rolls 14x 9 bobbin.
Six (6) 4-Spindle Drawing Frames, 4" rolls 14x9 bobbin.
Three (3) 4-Spindle Drawing Frames, 4" rolls, 12x7 bobbin.
Seven (7) 6-Spindle Drawing Frames, 4" rolls, 14x9 bobbin.
Seven (7) 6-Spindle Drawing Frames 4" rolls, 14x8 bobbin.
Seven (7) 6-Spindle Drawing Frames, 4" rolls, 12x8 bobbin.
Two (2) 6-Spindle Drawing Frames, 4" rolls, 12x6 bobbin.
Three (3) 8-Spindle Finishers 4" rolls 10x5 bobbin.
Two (2) 8-Spindle Finishers, 4" rolls, 10x4 bobbin.
Three (3) 8-Spindle Finishers, 4" rolls, 10x5 bobbin
Two (2) 8-Spindle Finishers, 4" rolls, 10x4 bobbin
Twenty-eight (28) 8-Spindle Fine Finishers, 4" rolls, 9x5 bobbin.
Forty (40) 30-Spindle Roving Frames, 4¼" pitch, 4" rolls, 5x3 bobbin.
Six (6) 30-Spindle Roving Frames, 5½" pitch, 6" rolls, 7x4 bobbin.
Four (4) 30-Spindle Roving Frames, 5½", pitch, 4" rolls, 7x4 bobbin.
Two (2) 30-Spindle Roving Frames, 6" pitch, 6 rolls, 7x4 bobbin.
Two (2) 24-Spindle Roving Frames, 5½" pitch, 5" rolls, 6x3½ bobbin.
One (1) 24-Spindle Roving Frames, 5½" pitch, 4" rolls, 6x3½ bobbin.
Six (6) 144-Spindle Cap Spinning Frames, 3½" pitch, 4" rolls.
Five (5) 200-Spindle Cap Trap Twisters, 3½" pitch.
Thirty (30) 140-Spindle Cap Trap Twisters, 3½" pitch.
Five (5) 200-Spindle Draper Twisters, 2¼" ring.
Five (5) 180-Spindle Collins Twisters, 2" ring.
Five (5) 200 Spindle Collins Twisters, 2¼" ring.
Ten (10) Lindsey-Reels, live spindles cross motion.
145 Crompton Plain Looms, 46" reed space.
49 Crompton Fancy Looms, 50" reed space
1 Whitin Heavy Pattern sample loom, 20-harness dobby.
2 Tolhurst Hydro-Extractors, engine driven.
2 Weston Hydro Extractors, belt driven.

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SPEED & STEPHENSON, 170 Summer St., BOSTON, MASS.

Situations Wanted.

The following advertisements are a portion of those of superintendents and overseers, of whom full particulars are on file at this office. Manufactu ers who may be in need of such men may address them in care of Textile World Record, Boston or state their requirements directly, and the addresses of suitable men will be furnished without charge.

Mr. C. T. Donlevy, a practical mill overseer and superintendent, who has a wide acquaintance with mill men, gives special attention to this department. He would be pleased to hear from any of his friends who may be interested. Address Textile World Record, 144 Congress St., Boston, Mass.

COTTON SUPERINTENDENTS.

Superintendent of a cotton mill, or overseer of weaving; worked on sheetings, shirtings, fancy lappett colored work, duck, drill, sateen, worsted, either all wool or cotton mix; familiar with all kinds of American and English makes of machinery; 43 years of age, married; good reference. 3798, Textile World Record, Boston, Mass.

Superintendent of a small cotton mill, or superintendent of weaving in a large mill; worked on all classes of cotton weaving, including jacquards, lappets, lenos, and fancies of most every description; familiar with all makes of American looms; will not go to Pa., N. Y., N. J., West, South or Canada; 42 years of age, married; good reference. 4317, Textile World Record, Boston, Mass.

Superintendent or carder or spinner in cotton or cotton waste mill; worked on white and colored cottons and cotton waste, wadding and garnett work; an expert on cotton spinning, woolen system; familiar with English and American makes of machinery; 41 years of age, married; good reference. 4318, Textile World Record, Boston, Mass.

Superintendent of cotton waste or woolen yarn mill, or overseer of carding in large woolen mill; worked on beavers, meltons, kerseys, serges, cassimeres, homespuns, jersey cloth, box cloth, coverts, etc.; familiar with all makes of American and English cards; will not go to R. I., Conn., Vt., Pa., N. J., or South; 48 years of age, married; good reference. 1701, Textile World Record, Boston, Mass.

Assistant Superintendent in a cotton mill, cotton yarn salesman for commission house, or with cotton machinery firm.; worked on all cotton goods, flax, jute, hemp, yarns and twines; familiar with Lowell Machine Co., Draper, Whitin, Kitson, Saco & Pettee, Lyall, Watson, Crompton and C. B. & C. machines; 24 years of age, married; good reference. 4333, Textile World Record, Boston, Mass.

WOOLEN SUPERINTENDENTS.

Superintendent of a small yarn or weave mill, or carder or spinner in mill of 15,000 to 25,000 spindles; worked on 8 to 76 white and 3 to 36 blended yarns; familiar with Fales & Jenks, Whitin, Howard & Bullough, Lowell, S. & P., also Brooks & Dorey; will not go East or Canada; 28 years of age, American, married; good reference. 4325, Textile World Record, Boston, Mass.

Superintendent or manager of a woolen or cotton mill or overseer of weaving; worked on men's wear, ladies' dress goods, overcoatings, domet flannels, fancy shirtings, fish twines, etc.; familiar with the D. & F., Crompton & Knowles, and general woolen machinery; will not go to Canada; 55 years of age, married, American; good reference. 3457, Textile World Record, Boston, Mass.

Superintendent, boss weaver, designer, or both; worked on plain and fancy worsteds, woolen cassimeres, cheviots, overcoatings, kerseys, tourist cloth, and all kinds of ladies' dress goods; thoroughly understands and can fix all kinds of Crompton looms as well as the latest Knowles looms; will not go to Canada; 54 years of age, married; good reference. 4315, Textile World Record, Boston, Mass.

Superintendent of worsted yarn spinning mill, especially top dyed yarns, French system; worked on raw stock, dyed and worsted yarns, on French and English systems, including combing; familiar with Platt Bros., Oldham, Asa Lees, Lowell Machine Shop, Fales & Jenks, Pawtucket and foreign makes of machinery; will not go West or South; 33 years of age, married, German; good reference. 4322, Textile World Record, Boston, Mass.

Superintendent of a worsted or woolen mill; 46 years of age, married, English; worked on fancy worsteds, woolens, plain and fancy, serges, piece dyes, mercerized and resist colored piece dyes, in fact all classes of men's wear; understands all makes of machinery; first class reference; could take a position at once. 4172, Textile World Record, Boston, Mass.

KNITTERS.

POSITION WANTED

as superintendent of a mill making Cotton Hosiery by a man with 25 years' experience.

Is thoroughly practical and understands the business in all of its branches. Address "Mill Manager," care of Textile World Record, Boston, Mass.

Overseer of Knitting; worked on merino and cotton nets, eiderdowns, jerseys, buffalo fur cloths, astrachans, glove linings and plain and vertical stripes; familiar with Tompkins, Campbell & Clute, Crane and Gormley machines; will not go South; 39 years of age, married; good reference. 4313, Textile World Record, Boston, Mass.

Machine Fixer; worked on ladies', men's and children's hosiery, mostly ladies'; familiar with the Victor, Standard, A. & B., Excelsior, Boss, Paxton & O'Neil makes of machines; prefers Pennsylvania; 24 years of age, single; good reference. 4335, Textile World Record, Boston, Mass.

Hosiery Mill Superintendent or boss dyer for large mill, running on aniline blacks and colors; worked on boys', misses' and children's, 1 and 1 and 2 and 1 ribbed hose, ladies' hose and men's half hose from 108 to 200 needle; familiar with all makes of machinery; 37 years of age, married; good reference. 4190, Textile World Record, Boston, Mass.

Superintendent or overseer of knitting; worked on everything from silk to plush; specialty is single thread and plated or wool work; familiar with all makes of both flat and circular machines; 44 years of age, married; good reference. 4181, Textile World Record, Boston, Mass.

Superintendent or boss knitter; worked on men's fine balbriggan, ladies', men's and children's wool underwear; familiar with all kinds of knitting machinery; 27 years of age, American. 3259, Textile World Record, Boston, Mass.

Superintendent or boss knitter in large mill; worked on worsted, wool, shoddy, plaited, cotton, lisle, mercerized and silk goods; familiar with Acme, Standard, Victor, Scott & Williams, and several other makes of machinery; also standard ribbers, loopers and sewing machines; 35 years of age, married; good reference. 4168, Textile World Record, Boston, Mass.

Superintendent or Overseer of knitting and finishing in a hosiery or underwear mill; has worked on hosiery, cotton, wool and merino, infants' cassimere toques, sweaters, sweater coats, plain ribbed underwear and ladies' Swiss ribbed vests; familiar with the Lamb, Syferth, Danner, Grasser; flat, M. S. W. & Fisher, Hepworth loopers and S. & W. 7/8 automatic, Union Special, button and buttonhole machines; good reference; 42 years of age. 4641, Textile World Record, Boston, Mass.

Assistant Superintendent or overseer or knitting on union suits, underwear, all makes of sweaters, toques, blouses, waists and fancy goods; familiar with Leighton, McMichael & Wildman, Nye & Tredick, Stafford & Holt, Tompkins Bros., Campbell & Clute, Acme, Cooper spring needle machines; also cuff and sewing machines; good reference; 42 years of age, married. 4110, Textile World Record, Boston, Mass.

Overseer of Knitting on underwear and double rib knitting machines; worked on all kinds of goods made on double rib machines; will not go South; 36 years of age, married, American; good reference. 4151, Textile World Record, Boston, Mass.

Overseer of Latch Needle Knitting; position wanted by a man 27 years of age, single; has worked on almost all grades of stitchers of ladies' and gents' cotton and worsted underwear; familiar with Scott & Williams, Wildman, Snyder, Nye & Tredick, Stafford & Holt and Fisher machines; can take a position at short notice; good references. 3873, Textile World Record, Boston, Mass.

KNITTERS.

Superintendent of an Underwear Mill or Lamb machine foreman; worked on full fashioned underwear, also lines of cut goods for the retail trade; familiar with Lamb & Wildman knitting machines and Singer, Wheeler & Wilson, Union Special and Reece makes of machinery; 30 years of age, married; good reference. 3856, Textile World Record, Boston, Mass.

Overseer of Knitting; worked on all fleece work, eiderdowns, merino nets, cottonets, jerseys, buffalo cloths and astrachans; familiar with Tompkins, Campbell & Clute, Gormley and Crane machines; does not understand ribbed or latch needle machines; will not go South or Canada; good reference; 30 years of age, married. 4671, Textile World Record, Boston, Mass.

Overseer of Knitting or second hand on latch needle machines; worked on ladies' Swiss ribbed vests, ladies' shaped vests and men's derby ribbed underwear; familiar with Lamb, Scott & Williams and Wildman machines; will not go West or South; good reference; 21 years of age, single. 4666, Textile World Record, Boston, Mass.

Overseer of Knitting or assistant superintendent in a hosiery mill; worked on all classes of seamless hosiery from coarse wool and cotton to fine cassimeres and lisle; familiar with Mayo, Victor, Electric, Campbell, Scott & Williams, 3/4 automatic, Brinton, 3/4 and full automatic and different makes of ribbers and loopers; prefers a position in Massachusetts; 28 years of age, married; good reference. 4650, Textile World Record, Boston, Mass.

Superintendent of a Ribbed Underwear Mill, assistant superintendent or overseer of finishing in a large mill. Worked on men's, ladies', children's underwear and government and merino knit underwear. Familiar with all makes of machinery. 38 years of age, married. Good reference. 4677, Textile World Record, Boston, Mass.

Superintendent of a Knitting Mill or would accept position as boss finisher; worked on flat, ribbed, fleece lined from yarn to finished garment, balbriggans, sweaters and full fashioned; familiar with all classes of machinery to make above goods; 31 years of age, American, married; good reference. 4192, Textile World Record, Boston, Mass.

Overseer of Knitting. Worked on fleece lined, flat or ribbed goods on Scott & Williams, Pepper, Brinton latch needle and Tompkins Bros., Campbell & Clute and Gormley Bros. spring needle machines; good reference, 35 years of age, married. 4114 Textile World Record, Boston, Mass.

Overseer of Knitting, fixer, or second hand; worked on cotton and worsted cashmere, woolen, lisle, mercerized, silk, stripes, heel and toe tips from 7 to 18 needles to the inch; familiar with all makes of machinery; 35 years of age, married; good reference. 4253, Textile World Record, Boston, Mass.

Overseer of Knitting; worked on ladies' seamless hosiery, ribbed, topped and plain; familiar with Acme, Banner, Scott & Williams, Hemphill, and some experience on Standard; will not go to Canada; good reference; 27 years of age, married. 4255, Textile World Record, Boston, Mass.

Superintendent or overseer of knitting in a hosiery mill; position wanted by a man 33 years of age, single; has worked on ladies', men's and misses' wool, worsted and cotton seamless hosiery on Wildman, Scott & Williams, Ruth and Brinton ribbers, Hepworth and Beatley loopers, Acme and Geo. D. Mayo automatic foot machine; good recommendations. 3698, Textile World Record, Boston, Mass.

Superintendent or manager of hosiery mill; position wanted by a man 37 years of age, married American; is experienced on woolen, worsted and cotton hosiery; is familiar with all makes of knitting machinery, but prefers the Mayo, Acme or Standard; first class references. 3650, Textile World Record, Boston, Mass.

FINISHERS.

BOSS FINISHER

In mill making Misses', Ladies' and Men's Hose, 500 to 600 doz. capacity.

Address B. F., care Textile World Record, Boston.

Overseer of Woolen or worsted finishing, dry finisher or shearer; worked on medium to low grade goods, beavers, meltons, cheviots, friezes, chinchillas, serges and worsteds; familiar with both English and American makes of machinery; prefers a position in or near Philadelphia; 42 years of age, married; good reference. 4336, Textile World Record, Boston, Mass.

Overseer of Finishing; worked on all kinds of goods, mostly on men's wear; familiar with all makes of machinery; 50 years of age, married; good reference. 4308, Textile World Record, Boston, Mass.

Second Hand of finishing; worked on plain and fancy worsteds, woolens, broadcloths, kerseys, meltons, overcoatings, etc.; familiar with all American makes of finishing machinery; will not go West, South or Canada; 30 years of age, married; good reference. 4306, Textile World Record, Boston, Mass.

Overseer of Finishing; worked on all grades of woolens and worsteds; familiar with all American makes of machinery; will not go to Pa., N. J., West, South or Canada; 46 years of age, married; good reference. 4302, Textile World Record, Boston, Mass.

Overseer Finishing, or stock dyeing and finishing; worked on Union cassimeres, satinets, all wool cassimeres, cheviots, dress goods, meltons and kerseys; 39 years of age, single, Scotch; with first class reference from past employers. 3449, Textile World Record, Boston, Mass.

Overseer of Finishing; position wanted by a man 34 years of age, English, married; worked on beavers, meltons, friezes, cassimeres, satinettes, chinchillas, cotton fancy and piece dyed worsteds; first class recommendation. 3729, Textile World Record, Boston, Mass.

Overseer of Woolen Finishing; position wanted by married man 30 years of age; worked on cheviots, dress goods, all grades of worsteds, overcoatings, suitings. 4048, Textile World Record, Boston, Mass.

Overseer of Finishing in a small woolen or second hand in a large mill; worked on face finished goods, beavers, kerseys, cassimeres and worsteds; good experience on gigging; understands all machines; good reference; 30 years of age, single. 4676, Textile World Record, Boston, Mass.

Promotion for Textile Workers

The most practical, surest, and quickest way in the world for ambitious textile workers to secure promotion is offered by an institution through whose assistance thousands of men have already advanced to better positions and larger salaries. They have done this in their own homes, in their spare time, and at an insignificant cost. We will cheerfully explain, free of charge, how we can adapt our plan to **YOUR** personal needs and income if you will write us today, stating the position you would like to secure.

INTERNATIONAL CORRESPONDENCE SCHOOLS, Box 882, Scranton, Pa.

FINISHERS

Overseer of Finishing, fulling or gigging, worked on face finished goods, meltons, kerseys, thibets, chinchillas, cheviots, serges, cassimeres, worsted casket cloths and cotton warp goods; all makes of machinery; good reference; 35 years of age, single. 4133, Textile World Record, Boston, Mass.

Overseer of Finishing or assistant to manager. Understands knitting and finishing, but would prefer finishing department. Worked on ladies' light weight vests. Familiar with the Union Special, Merrow, sewing machines; McMichael, Wildman, Scott & Williams and Nye & Tredick knitting machines. 22 years of age, single. Good reference. 4646, Textile World Record, Boston, Mass.

Overseer of Cotton Finishing and napping; position wanted by a man 34 years of age, Irish, single; has worked on domets, sheetings, all weights and widths, flannels, blankets, double felts, duckings, drillings and shirtings; familiar with all kinds of finishing machines used in the finishing of these goods; good reference. 3773, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; position wanted by a man 41 years of age, married, American; finished cassimeres, fancy and cotton worsteds, beavers, meltons, dress goods; first class reference; can take position at once. 3706, Textile World Record, Boston, Mass.

Overseer of Cotton Finishing or superintendent of bleach and dye works; position wanted by a man 42 years of age, American, married; has worked on lawns, lenos, shirtings, sateens, flannels, in fact all kinds of cotton goods except back filled goods; familiar with American and English machinery; good references. 3852, Textile World Record, Boston, Mass.

Superintendent of Finishing Works or overseer; position wanted by a man who has a wide experience on cotton goods of all kinds, fast blacks and sateens; 49 years of age, married, with good reference from past employer; will go any place for a good position: American. 3461, Textile World Record, Boston, Mass.

Overseer of Finishing; position wanted by a man 40 years of age, married and American; has worked on all kinds of wool and worsted and cotton mix goods and cotton worsteds; is familiar with all kinds of machinery used in wet and dry finishing; good references. 3536, Textile World Record, Boston, Mass.

Overseer of Finishing; worked on piece dyes, fancy worsteds, ladies' dress goods, cassimeres, coverts, suitings and overcoatings; familiar with a very large variety of machinery; will not go to New Jersey, West, South or Canada; 45 years of age, married; good reference. 4162, Textile World Record, Boston, Mass.

Overseer of Finishing Hosiery, or assistant superintendent; worked on all classes of hosiery, cotton, wool and worsted, seamless and fashioned; all makes of finishing machinery; understands finishing in all its branches; good reference; 40 years of age, married. 4131, Textile World Record Boston, Mass.

Ament's **IRON GLUE**

for covering Worsted and Cotton Mill Rolls, Pulleys, Etc. Holds the covering until it is entirely worn out. Saves eight times its cost in leather alone. Write for sample demonstration.

Manufactured and Sold by

H. B. AMENT, 620 Camp St., Louisville, Ky.

Lowell Crayons Meet the requirements of any cotton, woolen or worsted mill.

May we send samples? 15 colors and white.

Lowell Crayon Co., Original Manufacturers **Lowell, Mass.**

Trade Mark on every box.

CARDERS.

Overseer of Carding; worked on all kinds of wool, cotton and shoddy mixed goods; familiar with Davis & Furber, Cleveland and all makes of condensers; will not go to Pa., N. Y., N. J., West, South or Canada; 50 years of age, married; good reference. 4319, Textile World Record, Boston, Mass.

Overseer of Carding; worked on hosiery and thread yarns from 8s to 17s; familiar with all makes of American and English machinery; has a drawing-in hand and two speeder tenders in the family; 40 years of age, married; good reference. 4326, Textile World Record, Boston, Mass.

Overseer of Carding or a good second hand job; worked on wool, shoddy and cotton mixes; familiar with the Bridesburg and Furbush cards, and the Barker rubbers; will not go to N. Y. or Canada; 28 years of age, married; good reference. 4303, Textile World Record, Boston, Mass.

Carder, carder and spinner in wool, knitting or shoddy mill, or a good second hand position in card room of large mill; worked on all kinds of goods, also hosiery and knitting yarns; familiar with the Bridesburg, J. & B., D. & F., and Asa Lee mules, cotton lappers and openers, also all makes of American cards; will not go South; 34 years of age, married; good reference. 4307, Textile World Record, Boston, Mass.

Overseer of Carding or second hand in a large mill; worked on all kinds of goods except worsted; familiar with Davis & Furber and Furbush & Smith machines; will not go South; 30 years of age, married; good reference. 4312, Textile World Record, Boston, Mass.

Overseer of Carding; worked on cassimeres, meltons, cheviots, trictors, collar linings, fancy mixes, all wools, shoddy and cotton mixes; familiar with Cleveland, Davis & Furber, Taintor, Lombard, Platt & Furbush makes of machinery; 53 years of age, married; good reference. 4310, Textile World Record, Boston, Mass.

LOWELL TEXTILE SCHOOL

Fits for the best positions in all branches of the textile industry both commercial and manufacturing.

Complete courses in Cotton Manufacture, Woolen and Worsted Manufacture, Designing, Chemistry and Dyeing and Textile Engineering. All courses include thorough training in Mechanics, Advanced Mathematics, Mechanical Drawing, Chemistry, Decorative Art, Weaving, etc.

Complete equipment for applied instruction.

For Catalogue Address

CHAS. H. EAMES, S. B., Principal,

Lowell, Mass.

DESIGNERS

Assistant Designer; worked on worsted, cotton worsted and some woolen goods; familiar with twisters, dressers, looms and finishing machinery; 24 years of age, American. 4320, Textile World Record, Boston, Mass.

Designer; worked on fancy worsteds, piece, resist or union dyes, woolens or mercerized; familiar with the Crompton & Knowles looms; has had 15 years of experience in the pattern room; will not go to Pa., N. Y., N. J., West, South or Canada; good reference. 4309, Textile World Record, Boston, Mass.

Designer for Textile Fabrics, quilts, linens, etc.; worked on all kinds of bed spreads, linen damasks, etc.; familiar with card cutting and repeating machines, jacquard looms, etc.; 44 years of age, married; good reference. 4314, Textile World Record, Boston, Mass.

Designer or Overseer of weaving; worked on cotton worsteds, resist worsteds, and all fancy yarn dyes, worsteds, also woolens, suitings, and overcoatings; will not go West, South or Canada; 30 years of age, married; good reference. 4329, Textile World Record, Boston, Mass.

Assistant Designer, boss weaver, boss dresser, or dresser tender; worked on most everything in the line of woolens and worsteds; familiar with Knowles looms, Davis & Furber and Cleveland dressing frames; will not go West, South or Canada; 36 years of age, married; good reference. 2400, Textile World Record, Boston, Mass.

Woolen or Worsted or woolen and worsted designer. Worked on medium to high grade woolens and medium grade worsteds; familiar with Crompton, Crompton & Thayer, and Knowles looms; 38 years of age, married; good reference; will not go West, South or Canada. 4156, Textile World Record, Boston, Mass.

Assistant Designer or shipping clerk in a cotton mill; has held no position in a mill; is a student of the International Correspondence Schools; took a complete cotton course, including designing, cotton mill work, machinery and mill engineering; will not go to Maine, New Hampshire, Vermont, West or Canada; 25 years of age. 4210, Textile World Record, Boston, Mass.

BLEACHERS.

Overseer of Bleaching or dyeing; worked on cotton knit goods, underwear, hosiery, hosiery yarns, raw stock, making a specialty of dyeing developed and aniline blacks on stockings; familiar with Klauder & Weldon, piece dyeing, skein yarn and raw stock machines. Delehanty's garment, raw stock and oxidizing machines, and the Swartz German machine on sulphur colors; will not go West, South or Canada; 26 years of age, American; good reference. 4321, Textile World Record, Boston, Mass.

Superintendent of Bleaching and finishing cotton goods; worked on all kinds of cheese cloth, butter cloth, sheetings, quilts, cambrics, long cloth, ducks and drills; age 31, English, married. 3218, Textile World Record, Boston, Mass.

Overseer of Bleaching, or assistant superintendent in a bleach and dye works. Worked on all kinds of goods, cotton, wool and silk underwear, familiar with all makes of machines, 36 years of age, single. Good reference. 4690 Textile World Record, Boston, Mass.

Overseer of Bleaching; worked on all kinds of knit goods, yarns, cottons and worsteds; familiar with almost all kinds of machinery; 40 years of age, married; will not go South; good reference. 4242, Textile World Record, Boston, Mass.

Dyer, Bleacher or dyestuff demonstrator; worked on cotton and worsted skeins, cotton warps, cotton and wool raw stock, all kinds of knit goods, underwear, roll, garment and hosiery; familiar with all kinds of dyeing and drying machinery; will not go to Canada; 41 years of age, married. 4244, Textile World Record, Boston, Mass.

MISCELLANEOUS.

Overseer of Dressing; worked on all classes of colored and white goods from No. 8 to No. 120; familiar with all makes of machinery; will not go to Pa., West, or Canada; 48 years of age, married; good reference. 4316, Textile World Record, Boston, Mass.

Overseer of Dressing, spooling and drawing in a woolen mill; position wanted by a married man 27 years of age; has worked on all classes of woolens and cotton worsteds; familiar with Davis & Furber dressing machines and all makes of stop motion on spoolers; will not go South; good reference. 4550, Textile World Record, Boston, Mass.

Boss Dresser or second dresser in large mill; worked on all kinds of fancy woolens and cotton mixes; familiar with Davis & Furber makes of machinery; 35 years of age, married; will not go to Maine, Vermont, Pennsylvania, New York, New Jersey, West, South, or Canada; good reference. 4175, Textile World Record, Boston, Mass.

Overseer in Shoddy Mill; familiar with all kinds of the latest makes of shoddy machinery; 45 years of age, single; good reference. 4174, Textile World Record, Boston, Mass.

Manager, Superintendent, Mill Expert, Stayler, machinery or yarn salesman. Worked on worsted men's wear, fancy worsteds, piece dyes, dress goods and cotton manipulated goods. Prefers a position in Pennsylvania, New York, New Jersey, or the West. Good reference. 26 years of age, married. 4659, Textile World Record, Boston, Mass.

Carpenter, Foreman of Mill Repairs and mill work, or millwright; will not go South or Canada; 48 years of age, married; good reference. 4295, Textile World Record, Boston, Mass.

Overseer of Burling and Mending, or clothing house examiner; worked on fine and medium worsteds, cassimeres, kerseys, cheviots, dress goods and coverts; will not go to Me., N. H., Vt., West or Canada; 49 years of age, married; good reference. 4282, Textile World Record, Boston, Mass.

Overseer of Folding and Packing; worked on fine and fancy goods; 36 years of age, married; good reference. 4274, Textile World Record, Boston, Mass.

Loom Fixer; worked on men's wear, cotton worsteds and ladies' dress goods; familiar with Crompton & Knowles looms; will not go to Me., N. H., Vt., West, South or Canada; 34 years of age; good reference. 4280, Textile World Record, Boston, Boston, Mass.

Machinist and Repair Man; worked on everything made on Leighton round machines; can do any kind of repairing, but wants Leighton machines only; will not go to Me., N. H. or Vt., New York City, Brooklyn, or Jersey City; 38 years of age, single; good reference. 4266, Textile World Record, Boston, Mass.

Overseer of Wool Sorting or wool grader; worked on all kinds of wool, both foreign and domestic; 44 years of age, married; will not go West, South or Canada; good reference. 4214, Textile World Record, Boston, Mass.

Cloth Examiner in Commission House. Experienced on all classes of worsted and woolen goods, first class reference, 32 years of age, strictly temperate. 4104 Textile World Record, Boston, Mass.

MISCELLANEOUS.

CHEMIST and COLORIST

Young man wishes a position with an Aniline House as technical salesman or with large manufacturer as Chemist and Colorist.

A graduate of a textile school and formerly with an Aniline House and have been with a job dyer. Address Chemist, Care Textile World Record.

Mechanical and Mill Engineer open for engagement; wishing to locate with a growing concern desiring the services of an engineer of construction and mechanical works, or master mechanic; at present employed in similar position; desires advancement. 4324, Textile World Record, Boston, Mass.

Master Mechanic; worked on all kinds of textile and paper machinery; understands all makes of engines and electrical machinery; will go anywhere for a good position; 42 years of age, married; good reference. 4305, Textile World Record, Boston, Mass.

Master Mechanic; familiar with all kinds of machinery; 37 years of age, married; good reference. 4322, Textile World Record, Boston, Mass.

Agency Wanted; well trained technical man with commercial experience, hard worker, having office in Manchester, England, desires representation of first class firm for England and the Continent. Address S. C. M., care Textile World Record, Boston, Mass.

Position in Dry Goods commission house; has worked mostly on woolen and worsted dress goods, suitings and trouserings; familiar with Davis & Furber, Prince Smith & Son, drawing, spinning and twisting machinery; Lowell Machine Shop machinery, Noble comb, Crompton & Knowles, and Hall & Stella makes of machinery; will not go to Massachusetts, Rhode Island, Connecticut, New Jersey, South or Canada; 24 years of age, single; good reference. 4180, Textile World Record, Boston, Mass.

A High Class and efficient office and mill manager desires to connect himself with a high-class concern; 18 years' experience in resourceful and astute business management in knit goods manufacture; nine years as proprietor; 37 years of age, married. 4199, Textile World Record, Boston, Mass.

Mill Machinist on loom repairs or any kind of cotton machinery repairs; familiar with cotton machinery, Crompton & Knowles and Whitin looms; will not go to Rhode Island, New Hampshire, Vermont or Canada; 37 years of age, married; good reference. 4161, Textile World Record, Boston, Mass.

Loom Fixer; worked on cassimeres, cheviots, dress goods, blankets, flannels and shirtings; familiar with Knowles looms; good reference; 28 years of age, married. 4203, Textile World Record, Boston, Mass.

Master Mechanic, American, 39 years of age. Technical training, 20 years of experience in print works and Mills Steam plant, electrical apparatus, and hold first-class "Mass." engineer's license. Ten years with one of the largest print works in New England, at present Master Mechanic in large Cotton Mill. Wants change for educational reasons. Best of references as to character and ability. Address Educational, care Textile World Record, Boston, Massachusetts.

Cutting Machines

Every Textile Manufacturer has his own special problems. If these problems relate to cutting cloth, paper, felt, &c., in any way, shape or form we are always glad to volunteer our help in solving them.

61 Poplar Street
Brooklyn, N. Y.

Cameron Machine Co.

Special Textile
Machine Designers

COTTON WEAVERS.

Overseer of cotton weaving; worked on plain and fancy goods; familiar with the Whitin, Mason, Colvin, Draper, Kilburn and Lincoln looms; will not go to Pa., West or Canada; 42 years of age, married; good reference. 4304, Textile World Record, Boston, Mass.

Overseer of Weaving or second hand; worked on plain and fancy cotton goods and blankets; familiar with Northrop, Dropbox, dobby, spooling, warping and blanket finishing machines; 28 years of age, single; good reference, German. 4337, Textile World Record, Boston, Mass.

Second Hand of Weaving or designing in cotton mill; worked on all kinds of cotton goods; familiar with all kinds of American weaving machinery; 33 years of age, married; good reference. 4327, Textile World Record, Boston, Mass.

Overseer of Weaving, drawing in and twisting; position wanted by a man 44 years of age, married, English; has worked on plain twills, sateens, fancy lenos, Jacquard, lappetts, also plush goods; is familiar with Mason, Draper, Whitin and Crompton & Knowles looms; good references. 3590, Textile World Record, Boston, Mass.

A Young Man desires position in cotton weave room to become eventually an overseer; 28 years of age; has had a textile school education and is good at designing and calculating; will go anywhere for a position and can take a position immediately; German. 4164, Textile World Record, Boston, Mass.

Overseer of Weaving in a cotton mill; worked on plain twills, drills, sheetings, ducks, shirtings and hair cloth; familiar with Mutual, Crompton & Knowles looms; will not go to Mass., R. I., Conn., Me., N. H., Vt., West or Canada; 42 years of age, married; good reference. 4212, Textile World Record, Boston, Mass.

Overseer of Weaving. Worked on plain and fancy white and colored goods, checks, shirtings, sheetings, lawns, duck, silk and cotton goods; good reference, 40 years of age, married, all kinds of looms. 4108 Textile World Record, Boston, Mass.

Overseer of Weaving; worked on linen, cotton, silk, plain and fancy goods, lenos, ducks, drills, rubber goods and lappetts; understands designing; familiar with the pick and pick looms, jacquards, box and plain looms; also worked on 2 to 25 harness work; will not go to Pa., N. Y., N. J., West, South or Canada; 38 years of age, married; good reference. 4269, Textile World Record, Boston, Mass.

Overseer of Weaving in a small mill or a good second hand position; worked on twills, dobbies, pillow tubing, brocades, quilts, towels, shirtings and plain suitings; familiar with the Crompton, Knowles, Lewiston, Lowell, Mason, Whitin, Colvin and Draper machines; 29 years of age, married; good reference. 4262, Textile World Record, Boston, Mass.

WOOLEN WEAVERS.

Overseer of Weaving, or would accept good fixing or second hand job; worked on worsteds, fancy woolens, cotton worsteds, piece dyes, ladies' dress goods, cassimeres, men's suitings, thibets, blankets and flannels; familiar with Crompton, Knowles, Thayer & Crompton looms; will not go to Pa. or Canada; 38 years of age, married; good reference. 4323, Textile World Record, Boston, Mass.

Overseer of Weaving; worked on woolens and worsteds; familiar with Crompton, Knowles and English looms; will not go West or South; 46 years of age, married; good reference. 4331, Textile World Record, Boston, Mass.

Overseer of Weaving or second hand in a woolen mill. 38 years of age, married. Worked on wool and worsteds of all kinds, high and low grade, fancy and plain. Familiar with Crompton & Knowles looms. Good reference. Will not go West, South or Canada. 4548, Textile World Record, Boston, Mass.

WOOLEN WEAVERS.

Overseer of Weaving; position wanted by a man 28 years of age, single and Scotch; has worked on wool and worsted and union goods, blankets, shirtings, rugs, etc.; is familiar with Crompton & Knowles, also English looms and dobbies; has good references. 3507, Textile World Record, Boston, Mass.

Overseer of Weaving; worked on sheetings, denims, drillings, shirtings, table cloths, and a variety of cloth in ladies' dress goods in cotton, worsted, wool and silk; familiar with all makes of machinery; will not go to Pennsylvania, New Jersey, West, South or Canada; 31 years of age, married; good reference. 4209, Textile World Record, Boston, Mass.

Overseer of Weaving; worked on woolen and worsted goods of all kinds; familiar with Knowles, Crompton and Thayer looms; will not go to Pa., N. Y., N. J., West, South or Canada; 28 years of age, single; good reference. 4287, Textile World Record, Boston, Mass.

Overseer of Weaving; worked on wool and cotton blankets; prefers the asbestos business; familiar with the Crompton & Knowles looms; 40 years of age, married; good reference. 4276, Textile World Record, Boston, Mass.

Overseer of Weaving; position wanted by a man, American, 45 years of age and married; has worked on dress goods, cloakings, flannels, meltons and unions; is familiar with Crompton & Knowles and Stafford looms; good references. 3494, Textile World Record, Boston, Mass.

SPINNERS.

Overseer of Spinning, spooling or twisting; worked on most all kinds of goods in worsted yarn from 10s long wool to 65s botany and Australian; familiar with Lowell Machine Shop, Providence, Hall & Stell, Prince & Smith, Boyd makes of machinery; cap, ring or fly, twisters, frap and Collins Bros.; will not go South or Canada; 50 years of age, married; good reference. 4311, Textile World Record, Boston, Mass.

Second Hand of spinning or twisting; worked on mohair, crossbred, alpaca and botany; familiar with the Prince, Smith & Sons, Hall & Stells, Lowell Machine Shop and Fales & Jenks makes of machinery; will not go to Pa., West or South; 29 years of age, married; good reference. 4301, Textile World Record, Boston, Mass.

Superintendent or overseer of drawing, spinning or twisting; worked on all kinds of stock from 1 to 80s, mohair and alpaca; familiar with Prince, Smith & Son, Taylor, Wardsworth, Collins Bro., Platts, Lowell Machine Shop, Hall & Stell and Farrar makes of machinery; will not go West; 49 years of age, married; good reference. 4334, Textile World Record, Boston, Mass.

Overseer of Spinning or twisting. 38 years of age. Has had a wide experience in the manufacture of linen threads and yarns, both wet and dry spinning. Familiar with all classes of twisting and carding machines and preparing. First class recommendations from leading firms. 4528, Textile World Record, Boston, Mass.

Overseer of Worsted Spinning and twisting; position wanted by a man, 32 years of age, single, English; worked on all kinds of carpet and hosiery yarn and has been overseer in leading mills in England, Scotland and United States; familiar with all kinds of worsted spinning machinery; good references. 3308, Textile World Record, Boston, Mass.

Any Position in Cotton, spinning or twisting department where there is a chance for advancement; has worked on low counts, 20s to 30s, and American cotton for sewing thread; familiar with all reading types of German and English cotton machinery, mule and ring frame; has also had instruction in steam and electrical engineerng; 21 years of age, single; will not go to Pennsylvania, New Jersey, West, South or Canada; good reference. 4165, Textile World Record, Boston, Mass.

DYERS.

Overseer of Dyeing or would accept second hand position in wool dye house; worked on raw cotton, skeins, long chain, warps and pieces, also threads, twines and underwear; familiar with Klauder & Weldon, Waters and Butterworth makes of machines; will go anywhere for a good position; 29 years of age, single; good reference. 4330, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on raw stock, cotton, wool, shoddy, rags, piece dyes, all wool and union broadcloths; familiar with most makes of dyeing machinery; will not go West, South or Canada; 35 years of age, married; good reference. 4338, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on piece dyes, wool, cotton and shoddy, yarns and slubbing; will not go to Pa., N. Y., N. J., West, South or Canada; 42 years of age, married; good reference. 4328, Textile World Record, Boston, Mass.

Chemist and Dyer on fur hats, or salesman of dyestuff for reliable house; worked on all sorts of men's stiff and soft hats, all grades of ladies' felt hats, also bleached panama hats; familiar with such machines as are used in hat dyeing, mostly stock dyeing machines, and sizing in color machines; good reference; will not go to Pennsylvania, New York, New Jersey, West, South or Canada; 22 years of age, married. 4194, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on raw stock, worsted yarns, tops, piece dyes, cotton and shoddy; familiar with Klauder & Weldon makes of machinery; 27 years of age, single; good reference; will not go to New Hampshire, Vermont, Pennsylvania, West or Canada. 4196, Textile World Record, Boston, Mass.

Overseer of Dyeing; position wanted by a man 51 years of age, married, with A-1 references; worked on stock for traction and army goods, wood and bisulphate vats, natural and synthetical indigo, also stock for cassimeres, blankets, robes, shawls, cotton, wool, shoddy mixes, cotton warps, mercerized effects. 3692, Textile World Record Boston, Mass.

Overseer of Dyeing or Second Hand; worked on cotton and wool raw stock, dress goods, persian lambs, astrachans and worsted yarns; familiar with Klauder-Weldon makes of machinery; will not go South; 24 years of age, married; good reference. 4260, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on all kinds of woolen and worsted yarns, wool slubbing, worsted piece dyes, kerseys, cloakings, cheviots, tricots, friezes, all wool and union cotton yarns, raw cotton, shoddy and camel hair; familiar with Klauder-Weldon yarn and wool machines and all kinds of piece dye machines; will not go West or South; 46 years of age, married; good reference. 4224, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on worsteds, chromate and chrome top colors, broadcloths, dress goods, kerseys, meltons, thibets, worsted and cotton yarn; understands the latest methods of dyeing in alizarine acid colors, union dyeing and chromatic; familiar with all kinds of machinery; will go anywhere for a good position; 33 years of age; good reference. 4228, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on wool, cotton, yarn, piece, chromate colors and resist piece dyes; good reference; 43 years of age, married. 3506, Textile World Record, Boston, Mass.

DYERS.

Overseer of Dyeing; worked on all kinds of woolen goods, both in piece, yarn and raw stock; will not go West, South or Canada; 38 years of age, married; good reference. 4257, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on cotton, woolen and worsted yarns, piece dyes, raw stock, unions, resist dyes, underwear and hosiery; will not go to Pa., N. J., West, South or Canada; 32 years of age, married; good reference. 4299, Textile World Record, Boston, Mass.

Second Hand in a cotton mill dye house; worked on cotton yarn in skein and chain form, also raw stock; familiar with ordinary warp dyers, Klauder & Weldon and the Vacuum raw stock dyeing machine; will not go to Pa., N. Y., N. J., West, South or Canada; 22 years of age; good reference. 4300, Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on wool, shoddy, cotton yarn, silk and silk noils, also piece; 43 years of age, married; good reference. 4293, Textile World Record, Boston, Mass.

Second Hand in the dye house or finished percher. Worked on beavers, kerseys, broadcloths, thibets, flannels, cotton mixes, cheviots and cassimeres. Would prefer a position in the N. E States. 25 years of age. Good reference. 4648, Textile World Record, Boston, Mass.

Boss Dyer, scourer and bleacher in a knitting mill; worked on all grades of knitted underwear; first class references; will not go West or to Canada; 41 years old, married. 3004, Textile World Record, Boston, Mass.

Overseer of Dyeing. 32 years of age, married; worked on woolen, worsted, unions, cotton worsteds, raw stock, cross dyes, cotton worsted yarns; good reference. 4097 Textile World Record, Boston, Mass.

Overseer of Dyeing; worked on worsted, cotton and woolen yarns, sulphur dyes, cotton warps, raw wool and cotton, fancy worsteds, piece dyes, alizarine and fast colors on resist dyed worsteds, broadcloths, silks, ladies' and men's wear; familiar with all makes of machinery used for the manufacture of every description of men's and ladies' wear; will not go West, South or Canada; 39 years of age, single; good reference. 4215, Textile World Record, Boston, Mass.

Overseer of Dyeing. Worked on broadcloths, carriage and casket cloths, cassimeres, raw stock, underwear and sweaters. Familiar with all makes of machinery. 27 years of age, married. Good reference. 4630, Textile World Record, Boston, Mass.

Overseer of Dyeing. Worked on yarns, piece dyes, raw stock, wool, cotton and shoddy mixes, also slubbing. Familiar with different makes of dyeing machinery. Will not go West, South or Canada. 38 years of age, married. Good reference. 4629, Textile World Record, Boston, Mass.

Boss Dyer; worked on cotton and wool and mixed stock, yarns and piece goods, hosiery, slubbing and raw stock; also scouring of wool; first class recommendations; 28 years of age, single, English. 3327, Textile World Record, Boston, Mass.

Overseer of Dyeing. Worked on worsted yarns, fancy serges, mohair, slubbing and resist colors. All makes of machinery. Prefers New England. 28 years of age, married. Good reference. 4627, Textile World Record, Boston, Mass.

REDUCES BELT TROUBLES 75%

Warren's Liquid Pulley Cover saves power, machinery, belting and time; prevents slipping, lengthens life of belt, increases output, and is safe, sure, permanent and inexpensive. In use ten years. Write today for further details.

Large Working Sample Free

THE WARREN COMPANY, 493 Wells Street, CHICAGO

Wyandotte Textile Soda

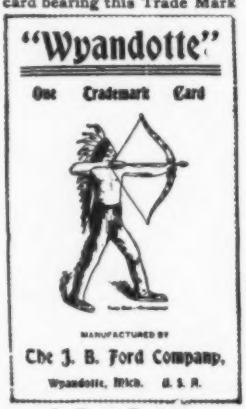
and

Carriage Cloths or Kerseys

Not infrequently Carriage Cloths or Kerseys become folded during the fulling process, consequently, some portions of these cloths take up more soap than other portions.

And as it is customary to depend upon the soap used in fulling for the scouring it often happens that this excess soap is not uniformly released and the result is streaked or blotched cloth.

None Genuine except with card bearing this Trade Mark



In Every Package.

These troubles are easily overcome by adding Wyandotte Textile Soda to the scouring solution. The Wyandotte Textile Soda emulsifies the excess fatty matter and the cloth is thus easily cleared and rinsed, making it even and uniform. Write for formula.

The J. B. Ford Co., Wyandotte, Mich.

Sole Manufacturers

THIS SODA HAS BEEN AWARDED THE HIGHEST PRIZE WHEREVER EXHIBITED.

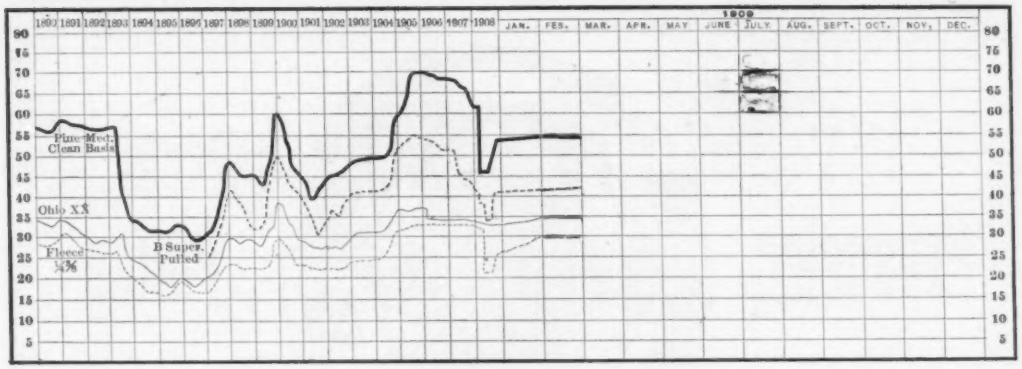


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

The Wool Market.

This market is held in check by only one factor, tariff revision. Were it not for that uncertainty prices would advance sharply. The stocks of domestic wool in Eastern markets are small and a large part of the new clip is under contract. South American wools have been active, but in all branches of the trade there is a disposition to go slow for a few months while the new tariff is in process of formation. Foreign markets are active and higher, the London auction sales having resulted in leaving an unusually small stock unsold. Business in home markets is restricted by the small supply and prospect of a continued scarcity. The indications point to a firm market tempered for a few months by the caution that is natural while the tariff rates on wool and wool goods are in process of revision.

FACTS AND GOSSIP.

*Alabama, Gadsden. Dr. J. R. Mowlin of this place wishes to communicate with persons interested in locating a cotton mill in the South. He advises that they have a large tract of land on the east bank of the Coosa River, opposite the city of Gadsden, which is a splendid location for a cotton mill, and other facilities are considered to be excellent. Good inducements are offered.

*Alabama, Slocomb. Arrangements have not been completed for the organization of the proposed cotton mill company previously reported. About $40,000 has been subscribed. The promoters wish to secure $100,000. G. H. Malone and Clyde Kelley are the promoters.

Arkansas, Russellville. The Russellville Water & Light Co. is negotiating with cotton manufacturers relative to the building of a cotton mill to be operated from the company's proposed new hydro-electric works.

*California, Stockton. Organization has not been completed by the new flax company, and nothing in addition to previous reports can be given. C. M. Jackson of Jackson & Earl, dealers in hardware and similar goods, who is prominently identified with the project, advises that they intend to engage in the business of raising and preparing flax, which they propose to sell to linen manufacturers.

Connecticut, Buckland. The storehouse of the E. E. Hilliard Co., Inc., containing a quantity of supplies and raw material, was carried away by high water in the Hockanum River.

Connecticut, Danielson. The Danielson Cotton Co. have placed an order with the American Moistening Co. for humidifiers.

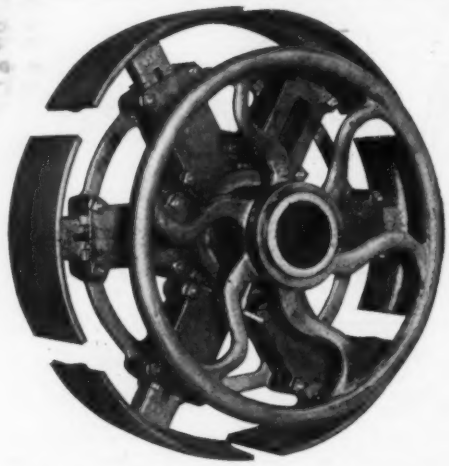
Connecticut, Meriden. The Silver City Braid Co. has sold its machinery to Otto Thileanhaus, who will move plant to Hartford and start business there.

Connecticut, Montville. The Alpha Mills Co., Inc., which purchased the plant of the Monarch Woolen Mills Co., have shut down the plant, and offer the machinery for sale in lots to suit purchasers. The buildings are for sale or lease. This is a 4-set mill with steam and water power.

Connecticut, Plainfield. The Lawton Mills Co. have placed a repeat order with the American Moistening Co., Boston, Mass., for the complete equipment of their No. 2 Mill with humidifiers.

Connecticut, Turnerville. M. E. Lincoln, trustee of the bankrupt estate of P. W. Turner, comprising the village of Turnerville, has sold the property to a syndicate of New York, New Jersey and Pennsylvania capitalists. The deal includes 1,100 acres of land, three silk mills and about thirty other buildings. It is understood that the new owners will enlarge the plant and engage in the manufacture of silk ribbons.

*Georgia, Dublin. The Georgia Cotton Mills have been incorporated with capital stock of $100,000 with the privilege of increasing to $500,000. J. Cooper, W. P. Jackson, C. C. Cooper and John R. Cooper are the incorporators. This new cor-

Expansion  Pulley

A Moderate Priced Expansion Pulley Built on an Interchangeable System.

Adapted to use in all places where relative speeds of connecting machines need to be corrected.

Diameter of pulley is instantly and easily adjusted by means of the handwheel.

Because all parts are interchangeable and are manufactured in large quantities the cost of a very superior expansion pulley is greatly reduced.

Note the sizes and prices:

18″ to 22″ diameter . .	$32.50
23″ to 27″ " . .	37.50
28″ to 32″ " . .	42.50
32″ to 36″ " . .	47.50

All interchangeable parts carried in quantities and all orders filled the same day received.

By means of interchangeable bushings pulleys can be fitted to any shaft.

THE TAYLOR & FENN Co
MACHINISTS & FOUNDERS
HARTFORD, CONN. U.S.A.

Alexander & Garsed, Southern Agents, Charlotte, N. C.

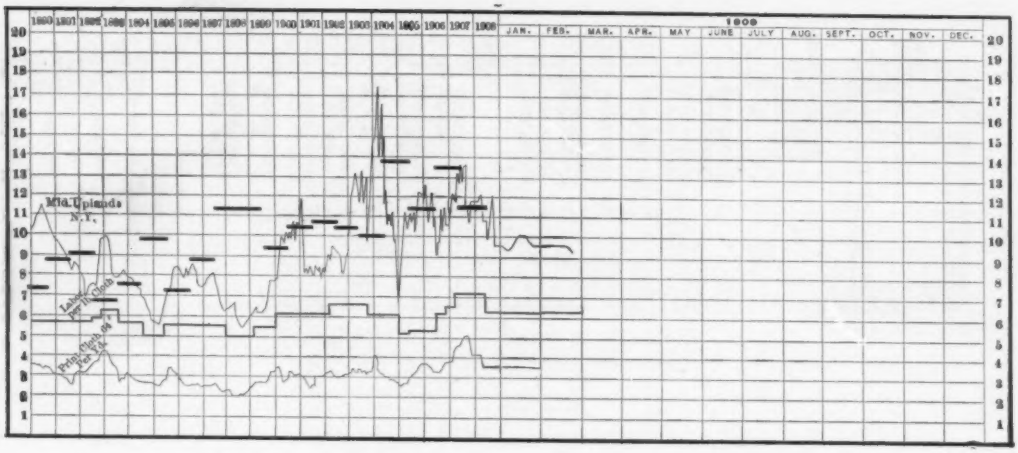


CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE.

The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

The Cotton Market.

A steady range of prices and a strong undertone have been the features of the cotton market since our last report. Reports of an improved demand for goods abroad and of crop damage have tended to offset the influences that tend to depress the market. The trade is optimistic and it is generally believed that business will be good as soon as the tariff question is settled. There has been a heavy movement into sight, making the total from Sept. 1 to Feb. 19 in excess of that for any corresponding period in previous years. The movement into sight from Sept. 1 to Feb. 19 is estimated by the Chronicle as follows:

1908-09,	Feb. 19	10,722,068 bales.
1907-08,	Feb. 21	8,894,145 bales.
1906-07,	Feb. 22	10,630,200 bales.
1905-06,	Feb. 23	8,472,743 bales.
1904-05,	Feb. 24	9,262,864 bales.

The same authority estimates the world's visible supply on Feb. 19 at 5,603,878 bales, as compared with 4,836,686 bales on corresponding date in 1908, 5,575,580 bales in 1907, and 5,290,798 bales in 1906.

---

poration will take over and operate the Dublin Cotton Mills, recently reported purchased by them.

Georgia, Hawkinsville. W. H. Murray of this place has completed his mill, and will shortly begin the manufacture of cotton towels.

Georgia, Macon. The Manchester Mfg. Co. has been granted charter with capital stock of $100,000. W. A. Crutchfield has been elected president and general manager; M. P. Callaway, vice president, and George G. Stanton, secretary and treasurer. The new corporation continues the manufacturing business operated under the same name at this place, with the same officers.

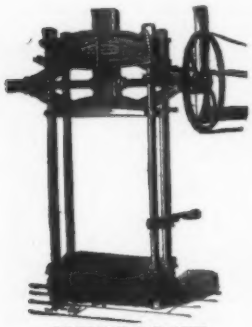
Maryland, Annapolis. The Baltimore United Waste Co. has been incorporated with capital stock of $10,000 to manufacture and sell waste. Russell M. Keith, Frederick Bayline and William C. Clift are the incorporators.

Maryland, Baltimore. Charles T. Wescott, treasurer of the Southern Cloth Company, whose mill at 553 Frederick Ave. has been idle since May, 1908, reports that they are negotiating with parties, who are about to incorporate a new company to lease the plant. 3,600 woolen spindles, 40 broad looms, and complete dyeing and finishing plant were operated. The new company will make the same kinds of goods as were formerly made.

Maryland, Elkton. The plant of Deibert & Wilson, which was burned out several months ago, is a total loss. The insurance has not yet been adjusted, and the prospects are that the mill will not be rebuilt. The plant consisted of 40 looms, which were operated on Turkey red damasks and plaid table covers, also a dye house in which they did their own dyeing.

Maryland, Havre de Grace. M. Gambrill has recently incorporated under the style of the Gambrill & Melville Mills Co. with capital stock of $200,000. The officers are as follows: M. Gambrill, president; W. L. Todd, treasurer; R. G. Gambrill and John Billingsby, superintendents. They are operating the plant on damasks, towels and crashes, and run 265 broad and 140 narrow looms, also a dyeing, bleaching and finishing department. M. Gambrill buys raw stock, and R. G. Gambrill buys supplies, etc.

Maryland, Reisertown. The Oakland Mfg. Co., located at Oakland, five miles from this place, are running their plant from four o'clock in the morning until seven o'clock at night on woolen suitings. Morris Gledhill is superintendent. Eight sets and 40 broad looms comprise the equipment.



KNUCKLE JOINT.

BOOMER & BOSCHERT

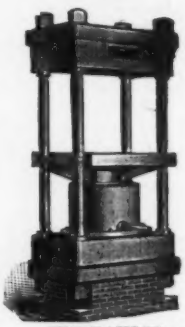
BALING PRESSES

ARE THE STANDARD

Hydraulic or Knuckle Joint
Any Size .. Any Power

Boomer & Boschert Press Co.

338 West Water S., SYRACUSE, N. Y.
Southern Agent, A. H. WASHBURN, Charlotte, N. C.



HYDRAULIC.

Rawhide Pickers

that always fit the Loom.

Garland Pickers are not only uniform in quality but in size also. Each picker is made with the utmost care from start to finish with the object of making it as near perfect as possible, and this care is shown in the finished pickers which run uniform in length and thickness and are ready for the loom without fitting.

TRADE MARK

GARLAND MFG. CO.
SACO, MAINE
[Formerly Loom Picker Co., Biddeford, Maine]

Your Safety Depends on the Efficiency and Strength of Your Valve.
BETTER BE SAFE THAN SORRY.

Water-Relief Valve.

BUY CROSBY STEAM APPLIANCES WHICH ARE RELIABLE

WRITE FOR CATALOGUE.

Steam Engine Indicators
Recording Gages
Blow Off Valves
Brandon Rubber Pump Valves
Single Bell Chime Whistles
Feed Water Regulators
Lubricators
Pressure and Vacuum Gages
Water Gages, Gage Glass, Etc.

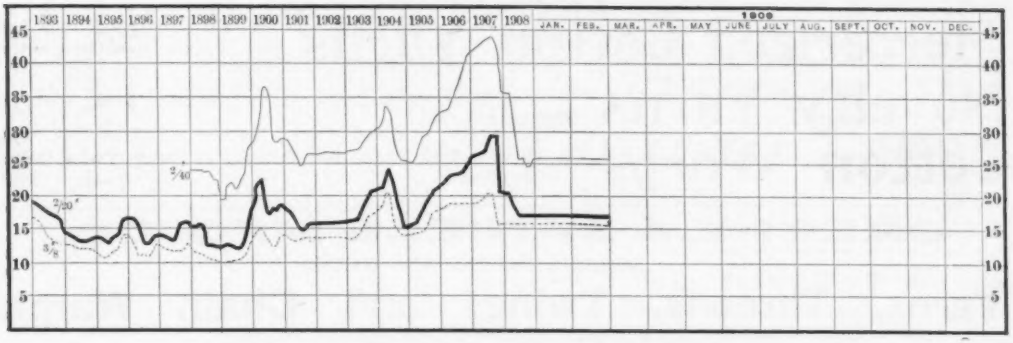
ENGINE—BOILER AND MILL SUPPLIES

Pop Safety Valve

CROSBY STEAM GAGE AND VALVE CO.

Stores, BOSTON, NEW YORK, CHICAGO, LONDON. Office and Works, BOSTON, MASS.

Yarn Department.



GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

The Cotton Yarn Market.

There has been no special activity in the yarn market. Orders that have been placed have not brought satisfactory prices. We believe that business is being done today by spinners at cost, if not at a loss, all of which reflects an unsatisfactory condition in the yarn market and in the market for knit and woven products.

The cotton market, however, has been steadily maintained at around 10 cents and as the season advances there is the usual prospect of a crop scare being developed by reports from the cotton belt. No one doubts very seriously the ability of the cotton growers and dealers to maintain the price around its present level and with cotton prices maintained, cotton yarns are a bargain on today's market.

Hosiery mills have been fairly busy with spring orders, but the prospect is not as promising as could be desired for new business. There has been a good business doing in worsted goods and the advance in prices of worsted yarns will probably result in a substitution of cotton yarns in some instances which ought to help the cotton yarn market.

Prices today are about as follows:

Eastern Cops.

6s	16½
8s	16½
10s	17
14s	18
16s	18½
18s	19
20s	19½
22s	20
24s	20½
26s	21
30s	21½
34s	22½
36s	23½
40s	24½

On cones, ¾c. more up to 14s; 1c. more from 15s to 22s; 1½c. from 23s to 35s, and 2c. above that.

Eastern Two-Ply Skeins, Carded Peeler.

12s	19
14s	19½
18s	20½
20s	21
24s	22
26s	22½
30s	23½
36s	27
40s	28
45s	32
50s	35
55s	38
60s	44

Eastern Two-Ply Warps, Carded Peeler.

2/30s	23½
2/36s	27
2/40s	28
2/45s	32
2/50s	35
2/60s	44

Egyptian Weaving Yarns.

Single Skeins Combed.

30s	35
36s	37
40s	38
45s	40
50s	45
55s	48
60s	52
70s	57

THE J. R. MONTGOMERY CO.,

Windsor Locks, Conn.

MANUFACTURERS OF

Mercerized Cotton Yarns Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

Novelty Yarns Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps on Beams, Jack Spools and Tubes. In Fancy, Twist, Colors and Printed.

GREENE & DANIELS MFG. CO.,

COMBED, CARDED AND GASSED

Yarns, Threads, Twines and Chain Warps.

DYE SULPHUR BLACKS DIRECT IN COPS, CONES OR TUBES.

Colored and Bleached Yarns Furnished in any manner desired by the trade.

Pawtucket, R. I.

MONUMENT MILLS,

Manufacturers of

White, Colored, Fancy and Double Twist

COTTON WARPS

HOUSATONIC, MASS. 4s to 60s.

M. J. TOOHEY & CO., OF FALL RIVER, MASS.

Banding made from Egyptian or White Cotton Yarn as Desired.

The Other Fellows Banding.

MARYLAND WOOL AND COTTON EXCHANGE
906-908 Streeper St., Baltimore, Md.

High Grade Hosiery and Weaving Yarns all colors.

Operating Well Equipped Bleachery, Dyehouse, Spool, Cone and Twist Mill.

EDDY & STREET,

Cotton, Woolen

Yarns and Braids

Worsted, Spun Silk.

PROVIDENCE, R. I.

The Merwin Paper Company

Hartford, Conn.

Press Papers and Fender Boards

Correspondence Solicited

Mills at Rainbow, Conn. Address Inquiries to Rainbow, Conn.

The Philadelphia Market.

7s and coarser	15¾
8s and 9s	15¾
10s	16½
12s	17
14s	17½
16s	18
18s	18½
20s	19
22s	19½
24s	20
26s	20½
30s	21
40s	26
50s	34

Southern high grade mule yarn:—

Cones.

10s	18
12s	18½
14s	19
16s	19¾
18s	20¼
20s and 22s	20¾-21¼
24s	21¾

Southern frame yarn, lower grades:—

6s and 8s	15½
10s	16

Eastern cones (high grade quality):—

10s	19
12s	19½
14s	20
16s	20¾
18s	21¼
20s and 22s	21¾-22½

Skein yarn (mostly Southern):—

4s and 8s soft	15½
10s and 12s	16-16½
14s to 20s	17-18
22s	18½
10/2	16½
16/2	17½
20/2	18
30/2	21
40/2	27

J. TOWNSEND WALKER
The Spinners Representative
All Nos. and Descriptions of Cotton Yarn Sold Direct to the Trade
ACCOUNTS SOLICITED.
P. O. Box 659 PROVIDENCE, R. I.
Banigan Building, Room 528
Telephone Connection.

C. MOORE & CO.,
Manufacturers of
TWINES, THREADS AND YARNS
Jacquard Harness Twines of all kinds on hand and made to order.
S. W. Cor. Fifth and Market Sts., Phila.

JAMES E. MITCHELL CO., COMMISSION MERCHANTS.
Cotton Yarns
AND COTTON CLOTHS.
122-124 Chestnut Street, PHILADELPHIA, PA.
73 Leonard Street, NEW YORK.
Brown Building, 185 Summer Street, BOSTON, MASS.
25 South Tryon Street, CHARLOTTE, N. C.

CATLIN & CO.,
Cotton Yarns.
345 Broadway, NEW YORK.
67 Chauncy Street, BOSTON.
128-130 Chestnut Street, PHILADELPHIA.
605 Medinah Temple, CHICAGO.

Harding, Whitman & Co.,
Dry Goods Commission Merchants,
COTTON AND WORSTED YARNS.
BOSTON. NEW YORK. PHILA.
CHICAGO. BALTIMORE. ST. LOUIS.

A. D. Salkeld & Bro.
COMMISSION MERCHANTS
DEP'T. FRED'K VIETOR & ACHELIS
COTTON YARNS
66-72 LEONARD STREET - - NEW YORK

Fred Sternberg & Co.
530 Broadway, - NEW YORK.
MERCERIZED TURKEY RED GASSED } COTTON YARNS.

LUDWIG LITTAUER,
SUCCESSOR TO
MOELLER & LITTAUER, 109 Greene St., New York
SILK, WORSTED, WOOLEN YARNS COTTON AND MOHAIR
Polished Threads and Tinsel. Artificial or Wood Silk.
Mercerized, Turkey Red, Fine Gassed Yarns.
SILK MILL, BOONVILLE, N. Y.

High Grade Hosiery Yarn
White and Colors. All Numbers. Sewing Twines on Cones and Tubes
SPECIALTIES IN WEAVING YARN
Black and White. Double and Twist for Woolen Trade.
CANNON MILLS 53-5 Worth Street, New York
Philadelphia Office, 205-7 Chestnut St.

GRANT YARN CO.,
COMBED AND CARDED COTTON.
YARNS 40's and above. AND WARPS
FITCHBURG, MASS.

S. T. Crocker, Pres. W. F. Stiles, Treas.

ORSWELL MILLS

Fitchburg, Mass.

Capacity, 45,000 Spindles.

HIGH GRADE YARNS

From Egyptian and Peeler Cottons, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted.

Cotton Yarns

Jenckes Spinning Company
Pawtucket, R. I.

Carded and Combed single and twisted Yarns and Threads from Peeler, Sea Island and Egyptian Cottons, on Cops, Cones and Tubes or in Skeins and Warps. Six Cord Thread Yarns a Specialty **Bleached or in colors**

We are successfully dyeing cotton yarns on parallel tubes and cops and would be pleased to send a sample to interested parties.

Dyeing, Coneing, Twisting and Tubeing of Cotton, Woolen and Worsted Yarns.
Dyers of Cotton Warps, and Hosiery in Fast Black and Colors.

Cross-Dye Colors a Specialty.
Yarns Furnished on Dresser Spools.
Dealers in All Kinds of Yarn for the Trade.

Germania Dye Works
MAX SARFERT, Prop,
Kensington & Allegheny Aves., Philadelphia.

Ballou Yarn Co.

PROVIDENCE. R. I.

Harness and Seine Twines and other Job Gassing, Winding, etc. All Numbers

GASSED YARN SPECIALTIES

T. H. S. CONE, Direct Selling Agent
COTTON YARNS
77 Worth Street, New York, N. Y.
Representing
Norwood Mfg. Co., Norwood, N. C.
Linn Mills Co., Landis, N. C.

Century Cotton Mills

Manufacturers of

Hosiery Yarns

Nos. 10s to 30s Sell Direct
South Boston - - - Virginia

Beacon Narrow Fabric Co.

Braids & Tapes

Notre Dame St. FALL RIVER, MASS.

Authorized Capital **$100,000**
W. A. Dickel, Pres. and Treas.
Samuel Reid, Vice-Pres. and Sec'y.
I. B. Scovill Gen'l Mgr. and Supt.

INDUSTRIAL MILLS CO.
Jasper and Hundingdon Sts., Phila., Pa.
Manufacturers of
NARROW FABRICS
Special Attention Paid to Plain and Fancy
Spool Tapes and Stay Bindings.

F. W. MAURER & SONS CO.
MANUFACTURERS OF
Fringes, Tapes, Bindings, & Narrow Fabrics
Office and Factory: WAYNE AVE. and BRISTOL STS.
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KROUT & FITE MANUFACTURING CO.

Manufacturers of

Silk, Cotton and Mercerized Narrow Fabrics

SPOOL TAPES A SPECIALTY.

Telephone Connection. Office and Mill, Allegheny Ave. and Emerald St., PHILADELPHIA.

16/3 slack	17
12/3 slack	16½
7/6 skein	15½
8/3 carpet	15
8/3 slack	15½
9/4 slack	15½

Warps (Southern):—

10s to 12s	16
14s	16½
16s	17
20s to 22s	17½-18
26s	18½
14/2	17½
16/2	18
20/2	18½
24/2	19½
30/2	21
40/2	27

Mixed colored yarns (mock twist, half colors):—

6s to 10s	18-18½
12s to 14s	19-20
16s to 18s	20½-21

Mock Egyptian, 2c. advance over white.

Egyptian, 5 to 6c. above the best quality white.

*Massachusetts, Blackinton. The Blackinton Mfg. Co.'s plant has been transferred from Arthur J. Meyer, who purchased the property at the recent sale, to Archer H. Barber. A part of the plant will be used by the Barber Leather Co., which will move from its present location on Union St., and the remainder of the plant, it is stated, will be used as a worsted mill by a new corporation to be formed. Incorporators of this new company, it is stated, will be Herman Waterhouse, John H. Waterhouse, and Albert Buffam. The machinery in the plant has been sold to them by Mr. Barber, and they have taken a lease of the building. It is stated that an addition of a new weave shed will be built of concrete construction The work will begin as soon as the frost is out of the ground.

Massachusetts, Fall River. The holdings of James E. Cunneen in the Seaconnet Mills have been purchased by William N. McLane, treasurer and agent of the company. About 300 shares were transferred. The price paid is not made public. It is stated that Mr. Cunneen will go into the real estate and insurance business.

*Massachusetts, Fall River. At the annual meeting of the Troy Cotton & Woolen Manufacturing Company, the proposition to authorize the issue of coupon bonds amounting to $300,000 as a dividend, was adopted. This plan was outlined in our last issue. Dividends were paid during the year amounting to $63,000, or 21 per cent.

RHOADS LEATHER BELTING

FLAT TANNATE BELT

Tannate Flat Belting has now been subjected to years of test in the service of numerous users, and it is with well founded confidence that we are giving it wider publicity.

Like the Round Tannate which stands first among round belts, it possesses great strength, flexibility and cling, but it is more solid, as a flat belt needs to be. It is hard to equal for high speed as well as for ordinary drives.

SEND FOR A SAMPLE.

J. E. RHOADS & SONS

Phila., 12 N. Third St. | Boston, 105-107 Summer St.
New York, 40 Fulton St. | Hamblet & Hayes Co., E. Agts.
Chicago, 243 E. Randolph St.
Factory and Tannery, Wilmington, Del.

LINEN YARN IMPORTER.

HUGHES FAWCETT, 115 Franklin Street, NEW YORK.

Flax, Hemp and Jute Line and Tow Yarns,
For Weaving Purposes.
Linen Jacquard Harness Twines,
Fine Cotton Harness and Heddle Twines.
For Cotton, Silk, Woolen and Carpet Manufacturers.
Correspondence solicited. Samples promptly furnished.

DUNCAN & YOUNGS
95 Worth Street, NEW YORK
Practical Manufacturers of
YARNS, THREADS, TWINES, CORDS, ROPE
AND MILL SUPPLIES
Anything in the line you cannot get anywhere else apply to us.

William B. Charles,
Amsterdam, N. Y.
Cotton Yarns, Cotton Cloth, Silesia, Sateens,
For the Underwear Trade.

F. C. BARTON
65 Worth Street, New York
MANUFACTURER OF
"LILY" BRAND NARROW FABRICS
WEB, TAPE, BINDINGS, ETC.

THE BIAS NARROW FABRIC CO.
F. C. BARTON, President
65 Worth Street, New York
Bias and Straight Cut Fabrics and Ribbons.
Embossing and Cutting Customers Own Goods a Specialty.

Pocasset Worsted Company,

Worsted Yarns.

BOSTON
100 BOYLSTON STREET
TELEPHONE 19 OXFORD

NEW YORK
45 EAST 17TH STREET
UNION SQUARE

H. HODGSON, Pres. & Treas. FRED HODGSON, Gen. Mgr.

QUEENSBURY MILLS

Mohair, Lustre and Worsted Yarns

—Single and Two Ply—

Grey—Colors on Mixtures Worcester, Mass.

French System. **B. F. BOYER CO.,** Bradford System.

MANUFACTURERS OF

WORSTED AND WOOLEN YARNS,

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—WORSTED YARNS—

RICHARD CAMPION.

SELLING AGENT FOR

Bristol Worsted Mills,
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300 Chestnut Street,
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Woolen and Merino
YARNS
Eaton Rapids Woolen Mills,
EATON RAPIDS, MICH.

Worsted AND Woolen **Yarns**

WALTER McCOOK

BELL TELEPHONE LOMBARD 3790

576 Bourse
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MILLER MANUFACTURING COMPANY

Manufacturers of

SOAPS for Textile Use, SIZINGS, OILS, Etc.

Write us for Prices.

668 EDDY STREET, PROVIDENCE, R. I.

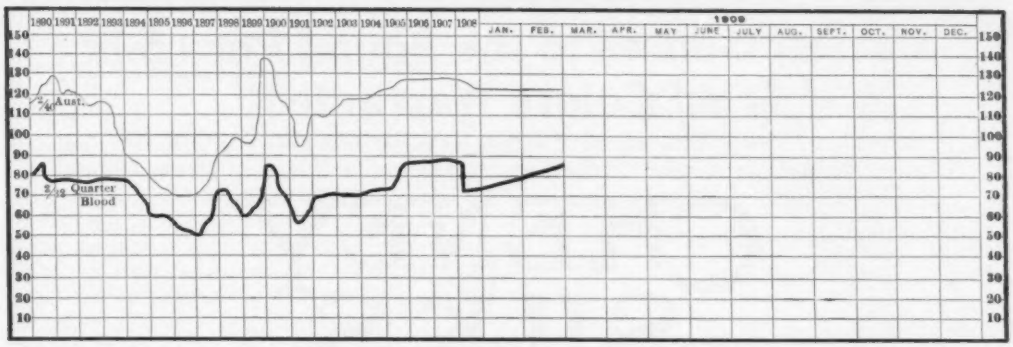

CHART SHOWING RANGES OF PRICE OF WORSTED YARNS.

The Woolen and Worsted Yarn Market.

The condition of the yarn market is good. All kinds of yarn are strong, worsted yarn particularly being well sold up. There has been a gradual rise in price. Both Bradford and French spun show a gain. Spinners are of the opinion that prices will soar higher and they are running their plants to full capacity to meet the demand. With orders on hand they will be able to run for several months. The manufacturers were shy and did not credit the opinion of the spinners as to the advance in prices, but are now convinced of the fact. A great many manufacturers who ordered freely at the beginning of the season are still drawing on their account. French yarn spinners have booked good orders at advanced prices. The demand has been for finer counts. High blood single 40s, 2/50, 2/60, 2/70 the single 30s are also used quite extensively. Australian wool is very dear and the opinion is that it will advance further. Fine noils are advancing strongly. Good reports come from dress goods, more especially to those manufacturers presenting a good line of 2/30s, 2/40s, 2/50s, 2/60s, 2/70s.

The demand for men's wear has not been so active but is improving. Many claim it is owing to the mild weather, which has been a d triment to heavy weights, but there is more activity in light weights. Spinners have done very well and deserve praise for meeting the demand of the weavers.

The knit goods manufacturers are busy at present. The demand is for 15s to 20s in 2, 3 and 4 ply. The sweater trade has been quite satisfactory and there is still an active demand. Many knitters have trouble getting their deliveries, claiming the spinner is favoring the weavers. Woolen yarns for knitting trade are active. 2/20 and 2/25 are the main counts. Owing to the advance price of worsted woolen yarn is used as a substitute. Many knitters are selling to jobbers, who are active in having their stocks show well. While it is impossible to form an opinion as to the future the woolen and worsted yarn trade both are in good condition at present. A great many are optimistic and believe the demand will continue. We quote as follows:

BRADFORD SPUN YARN.

2/12 to 2/16 low common	65-67½
2/26 to 2/28 common	67½-70
2/12 to 2/20 1/4 blood	77½-80
2/26 to 2/28 1/4 blood	82½
2/32 to 1/4 blood	82½-85
2/20 3/8 blood	87½-90
2/26 3/8 blood	90-92½
2/30 3/8 blood	92½-95
2/36 3/8 blood	95-1.00
2/40 1/2 blood	1.07½-1.10
2/40 delaine	1.12-1.15
2/50 delaine	1.20-1.25
2/40 Australian	1.22½-1.25
2/50 Australian	1.35
2/60 Australian	1.50
2/24 lustre	85
2/28 lustre	87½
2/30 and 3/32 lustre	90-92½
2/36 lustre	97½-1.00
1/24 worsted and 80s single cotton for raincloths	1.00
1/24 worsted and 120 single cotton for raincloths	1.10

FRENCH SPUN YARN.

1/20 1/4 blood	80-82½
1/20 high 1/4	85-87½
1/20 3/8 blood	92½-95
1/20 1/2 blood	97½-1.00
1/30 high 1/4 blood	94-96
1/30 3/8 blood	97½
1/30 1/2 blood	1.00-1.02½
1/40 1/2 blood	1.07½-1.10
1/50 delaine	1.17½-1.20
1/40 Australian	1.30-1.35
1/50 Australian	1.35-1.37½
1/60 Australian	1.40-1.42½
1/70 Australian	1.47½

Sixteen Ounces to the Pound Pure Silk
Fast Colors Warranted

A pound of Cheney Silk *means* "sixteen ounces" of *pure silk*. That's the Cheney standard of weight. Whether it's Spun Silk Yarns or Dress Goods

CHENEY SILKS

maintain that standard. Moreover, Fast Colors are *Guaranteed*—a feature of vital importance.

CHENEY SPUN SILK YARNS

are made in the Gray or Dyed; on Spools or Cones, Warped or in the Hank. Organzines, Trams and Singles—full weight—fast colors. Special Yarns made to order for all sorts of Silks or Silk Mixture Goods. Manufacturers' orders promptly executed. Also makers of

Dress Silks, Satins, Gros-Grains, Shower-Proof Foulards, Pongees, Millinery Silks, Upholstery Goods, Ribbons, Sashes, Plushes, Velvets, etc., etc.

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South Manchester, Conn.

Salesrooms:
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CHICAGO, Heyworth Building PHILADELPHIA, 929 Chestnut St.
SAN FRANCISCO, Chronicle Building

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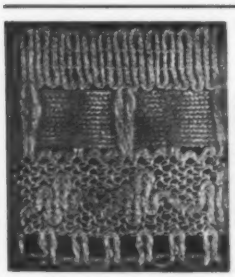
Foreign and Domestic
Spun Silk Yarns and Noils.
Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.

54 Howard St., cor. Mercer St., NEW YORK.

SAUQUOIT SILK MFG. CO.,
INSULATING AND BRAIDING SILKS.
ORGANZINE, TRAM & HOSIERY SILKS.
Fast Dye Organzines for Woolen Manufacturers a Specialty.

Mills: Bethlehem, Pa., Phila., Pa., Scranton, Pa. New York Representatives, Wm. Ryle & Co., 54 Howard St.—Phila. Office, 4015 Clarissa St., Nicetown.—Chicago Office, 188-190 Market St.—Boston Office, 78 Chauncy St.



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BRAIDS Cotton, Worsted, Mercerized, Cotton and Silk Twilled. **TAPES** Common, Twilled, Superfine and Plain 13 to 35s, white and colors on spools.
YARNS Cops, Skeins, Warps, Tubes and Cones. **THREADS** on Spools, Tubes, Cones, Unbleached Bleached and Colors for Manufacturers' use.
CROCHET LACE EDGINGS Latest Styles in Pant Laces.

229 Church Street 231 . . PHILADELPHIA

The Rag and Shoddy Market.

Mills are buying stock sparingly and only to cover actual requirements. The unwillingness to lay in stocks against future needs is more pronounced than ever. There is some discussion over the prospect of a reduction of the tariff on rags, shoddy and waste, but dealers feel that, no matter what change is made, time will be allowed for the trade to adjust itself to the new conditions. Moreover, it is pointed out, American and foreign prices for wool substitutes are nearer the same level than in the case of other wool products, consequently there is not the possibility of a great disturbance in the rag and shoddy markets by tariff changes, as in other branches of the trade. We quote as follows:

SHODDIES AND EXTRACTS.

White yarn, best all wool	47-50
White knit, all wool, best fine	36-41
White knit, No. 2	32-38
Light yarn, extra fine	34-37
New pure indigo blue	30-32
Merino.	
Fine light, all wool	29-31
Medium light, all wool	17-20
Fine black, all wool	27-29
Fine dark, all wool, best grade	21½-24
Medium dark, all wool, No. 2	17-18
Red knit stock, strictly all wool	22-24
Red flannel, all wool	26-27½
Dark blue for hosiery, strictly all wool, No. 1	22-25
Dark blue for hosiery, not all wool, No. 2	17½-19½

WOOLEN RAGS.

Fine merchant tailors	10-12
Choice light colors	16-18
Browns	11-15
Blacks	10-13
Fine blues, plain	10-12
Fine dark	9-13½
Medium dark	6-10
Worsteds.	
Blue	15-17½
Black	19-20½
Serges.	
Black	10½-12½
Blue	11-13
Flannels.	
New scarlet	18-20
New blue	17½-19½
Cloakings	4½-6½

SOFTS AND KNIT STOCK.

Soft woolens, best	5½-6½
Old white flannels	12-13
Old red flannels	12-13
Old blue flannels	5-6½
Old plaids	7-9
White stockings	20-22
White hood stock	20-23
Clear hoods	10-12

Knitting and Weaving YARNS.

Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment.

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Philadelphia, Pa.

EDWIN F. SCHOFIELD
Cotton Waste
IMPORT and EXPORT
45 S. 3rd St. Philadelphia

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Amsterdam, N. Y., U. S. A.
Cotton and Wool Wastes
COTTON YARNS
Contracts made with Cotton and Woolen Mills for Yearly Waste Production. Correspondence solicited. Shepperson's Code, 1878. Cable Address "Charles."

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Established 1860—Incorporated 1893.
THE S. BLAISDELL, JR., CO.,
COTTON, EGYPTIAN PERUVIAN
American Long Staple a Specialty. Shipments direct to mill from Egypt, Peru and all American Southern Points.
CHICOPEE, MASS.
Cotton Waste Purchased on Yearly Contract from Mills.

Testing of Yarns.
Count-Twist-Strength-Moisture-Chemical Test
When in doubt apply to
NEW YORK SILK CONDITIONING WORKS
138-140-142 Spring St., New York

Dyestuffs and Chemicals.

Acids.

Acetic, 100 lbs	2.50-3.00
Citric, domestic	50-52
Oxalic	8-9
Sulphuric, 66°, 100 lbs.	1.25-1.82
Muriatic, 18°	1.12-1.80
Tartaric crystals	2.65-3.00

Miscellaneous Chemicals and Dyestuffs.

Acetate of lime, gray, 100 lbs.	2.50-2.91
Alum, lump	1.73-2.49
ground	1.83-2.26
powdered	2.80-3.35
Aqua ammonia, 26°	
Ammoniac, sal., gray	
Borax, bbls.	4-8
Brimstone, crude, ton	27-51
Copperas	61-80
Cream tartar, crystals	21-25
Fuller's earth, powdered, ton	20-22
Glauber's salt	51-65
Potash, chlorate, crystals	10-13
powdered	12-13
carbonate	6-8
Soda, bicarbonate	1.60½-1.76
Soda, caustic, domestic, 60 per cent.	1.72-1.91
Sal., American	72-86
Vitriol, blue	5½-6
Acetate of soda	4-6
Acid, picric, best crystals	25-50
tannic, commercial	30-41
Albumen, egg	61-71
blood	25-33
Alizarine, red	19
Aniline, oil	11-12
salt crystals	14
Bichromate of potash, American	9-11
Bichromate of soda	8-10
Bisulphite of soda	3-4
Cutch, mat	5-8
Dextrine, imported potato	6-11
Divi-divi, ton	47-70

*Massachusetts, Fitchburg. The entire capital stock of the Fitchburg Duck Mills has been transferred to a group of Fitchburg men. A meeting of stockholders will be held next week to determine upon organization. Charles W. Hamblen is at the head of the new company.

Massachusetts, Lawrence. The Pacific Mills have purchased a tract of land on Merrimack St. east of the Wood Worsted Mills, but no steps have been taken or plans considered for building on it. The purchase of this property gave rise to reports regarding the enlargement of the Pacific Mills.

Massachusetts, Lowell. Nearly all the machinery in the Howe St. mill of the Belvidere Woolen Mfg. Co. has been removed to the other mill belonging to this company on Lawrence St., which is in operation under the direction of the Sterling Mills. The annual meeting of the Belvidere Woolen Mfg. Co. will be held in March, and it is expected that some steps will be taken to dispose of the Howe St. property.

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NON-FLUID OILS

offer manifold Economies.

Economy **in Lubricants**—Non-Fluid Oils insure absolute freedom from waste, for they cannot drip or spatter like fluid oils, and they outlast the best greases.

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Economy **in Power**—Non-Fluid Oils lubricate most efficiently without the friction drag of stringy greases, therefore they save power.

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Economy **in Time**—Non-Fluid Oils require the least attention of any known lubricant.

It will pay you to fill out attached coupon and secure free samples.

Originators and Sole Manufacturers,

New York & New Jersey Lubricant Co.,
15 Church St. and 165 Broadway,
New York City, N. Y.

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N. Y. & N. J. LUBRICANT COMPANY. Dept. H.
Gentlemen; Please send samples of Non-Fluid Oil.
FOR TRIAL ON.....
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The HOME INSURANCE COMPANY NEW YORK

Organized 1853. MAIN OFFICES, 56 CEDAR ST.

Cash Capital, $3,000,000.

ASSETS January 1, 1909	$24,856,499
LIABILITIES (Including Capital)	14,173,678
RESERVE AS A CONFLAGRATION SURPLUS	800,000
NET SURPLUS OVER ALL LIABILITIES AND RESERVES	9,882,821
SURPLUS AS REGARDS POLICY-HOLDERS	13,682,821
Losses Paid Since Organization Over	$115,000,000

IDEMNITY
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on acceptable
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at the
Minimum Rate

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FREDERICK C. BUSWELL, Vice-Pres. CHARLES L. TYNER, Secretary.
CLARENCE A. LUDLUM, Asst. Sec'y. HENRY J. FERRIS, Asst. Secretary.

FACTS AND GOSSIP.

Massachusetts, Fall River. There are rumors of a stock dividend at the Hargraves Mills and Parker Mills. The capital stock of the Hargraves is $800,000 and 77,392 ring spindles, 34,298 mule spindles, and 3,100 looms are operated. A 50 per cent. stock dividend, which would bring the capital to $1,200,000, is certainly not excessive for a fine goods mill of the size of the Hargraves.

Massachusetts, Lowell. It is reported that a large cotton manufacturing company contemplates locating a plant in this city.

Massachusetts, Methuen. The Jersey Fabric Co. has been incorporated with capital stock of $75,000 to manufacture cotton and woolen and silk goods; also to dye and finish.

Massachusetts, Milbury. Eighty looms are being operated by the National Crash Mfg. Company, and as soon as experienced operatives can be secured 30 more looms will be started. This concern took over the plant of the United States Linen Company in August, 1908, and has a capital stock of $50,000.

Massachusetts, Newton. The Saxony Worsted Mills have placed repeat order for humidifiers with the American Moistening Co., Boston, Mass.

Massachusetts, Northboro. There is a report that the Hudson Fiber Co. of Hudson is negotiating for a lease of the Woodside Mills at this place.

Massachusetts, Pittsfield. James & E. H. Wilson have received large orders for resist dye worsteds which will keep the mill running at full capacity for several months.

Massachusetts, Shirley. F. D. Weeks of the F. Weeks Extracting Co. has secured controlling interest in the Gould Mfg. Co., and is now president and treasurer of the company. This plant has equipment of six pickers for manufacturing shoddy.

*Minnesota, Stillwater. The binder twine plant at the State Prison has started manufacturing.

*New Hampshire, East Rochester. A report that the Cocheco Woolen Mfg. Co. has shut down for an indefinite period is misleading. The shut down is to be temporary, and the company advises that they expect to resume operations at an early date. Opportunity to make needed repairs is welcomed by the company.

New Hampshire, North Salem. It is reported that the Atlas Worsted Co. will shortly return to full production. Dress goods are manufactured on 48 looms.

New Hampshire, Tilton. On February 1 employes of G. H. Tilton & Son received an increase of 5 per cent. in wages.

New Jersey, Paterson. The Imperial Silk Co. has been incorporated with capital stock of $100,000 by Samuel J. Aronson, Abraham Mockowartz, and Michael Germansky.

The WM. H. LORIMER'S SONS CO.,

Manufacturers of

MERCERIZED YARNS

FOR ALL PURPOSES.

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PETER B. MCMANUS, Pres. and Treas. EDWARD J. MCCAUGHEY, Secy. and Mgr. JOHN MCMANUS, Vice-Pres.

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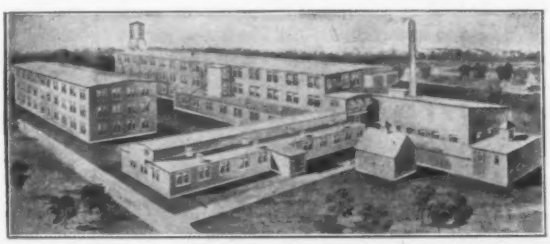

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in skein, and long and short

CHAIN WARPS

Fast Colors a Specialty.

Daily Capacity 30,000 lbs.

Fast Colors and Black for Worsted Trade.

Office and Works, Pawtucket, R. I.

Established 1881.

GLOBE DYE WORKS CO.,

Successors to R. Greenwood & Bault

DYERS BLEACHERS AND **MERCERIZERS**

OF COTTON WARPS AND SKEIN YARNS

Globe Bleach and Dye Works,
Oxford and Worth Sts., Frankford, Pa.

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YARNS BLEACHED AND DYED (delivered on cones)

BLEACHING and DYEING

ESPECIALLY FOR THE

KNIT GOODS TRADE

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Of Turkish Towels, Cotton Yarns, Underwear and Tapes

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The remarkable German finish for cotton, wool and worsted cloths

is the Simplest and Cheapest means for giving Goods Fullness, Body and Weight.

is guaranteed harmless to fibre and color, does not coat the yarn, but closely unites with it, eliminates dusting off during the napping process. Does not change goods while in stock.

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Dyeing and Finishing of Piece Goods Exclusively, such as Wool Armures, Prunellas, Satins and Henriettas, Panamas, Poplins, Serges and Cheviots, Mohairs, Bradford Finish, in Fancy and Solid Colorings. Also Suitings and Cloakings.
Specialty in the Treating of Silk and Wool Fabrics, such as Eoliennes, Crepes and Henriettas and all high class wool tissues like Batiste, Voiles and Foules. Also, Cotton and Wool Goods, Mohair Linings and Lastings.

SPECIAL ATTENTION IS GIVEN TO THE REDYEING OF ABOVE

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CONE AND TUBE WINDING

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Fast Colors on Silk for Worsted Manufacturers.

Pure Dye and Weighted. Bright and Souple.
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We are Dyers of all kinds of YARNS Cotton AND Warps

We are sure we can give you better work and better service than you can get elsewhere. A trial will convince.

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Trucks for Yarn Dryers and Dye Houses

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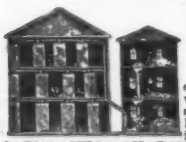

CHARLES H. SCHNITZLER,
Patentee and Sole Manufacturer of
THE PNEUMATIC CONVEYOR

For the handling of wool and cotton stock, rags, excelsior, jute and all kinds of fibrous material, wet or dry. Also spool elevators, steam heating and ventilating, and mill work generally. Blower and fan work a specialty. This conveyor is patented. Beware of infringement.

SATISFACTION GUARANTEED Patented Oct. 15, 1889.
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DYE STICKS

Drying and Sulphur House Poles of Natural Round Water Grown Cedar for Cotton, Wool, etc. Special Hardwoods in Standard No. 1 and "Selects" without knots, grades, for Silk Dyeing. Manufactured by, prices and all information from

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Alizarine Colors
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INCORPORATED

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Fast Colors for Wool and Cotton.
Full Line of Direct Cotton Colors.

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PYROGEN BLUE R . . .
PYROGEN INDIGO. . . . .

Direct Sulphur Colors, Faster than Indigo, to light and Washing.

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Sulphur Colors for cotton dyeing.

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Fast one-dip mordant dyes.

RESIST COLORS All shades

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animal & vegetable fibres or their mixtures is the best.

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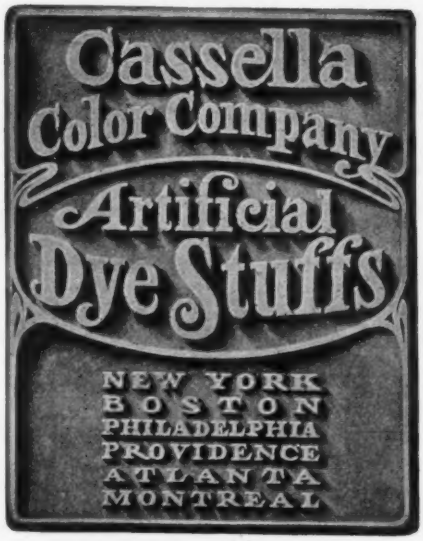

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CONCENTRATED FLAVINE

In these days of the competition of inferiority and adulteration it is well to do business with this firm, who adhere to the standards set by them years ago.

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Sulphur Blacks, Sulphur Blues, Sulphur Browns, Sulphur Greens, Sulphur Yellows, Indocyanines, Nerols
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of every shade and description, absolutely fast to sunlight, fulling, acids, etc.

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dyeing either after the one bath method absolutely fast, or on chrome bottom.

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SULPHUR BLACKS, BLUES, BROWNS

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AUTOGENE BLACK BEE

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The St. Denis Dyestuff and Chemical Company, Ltd., PARIS, FRANCE
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AS REGARDS SHADE, DURABILITY AND COST OF DYEING, THE BEST SULPHUR BLACK EVER PRODUCED

SAMPLES AND FULL PARTICULARS FROM
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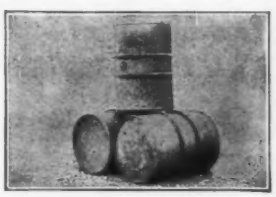

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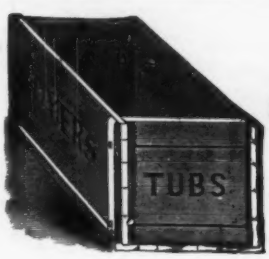

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NEW Bleaching Process

that does away with the guess-work and inconvenience of the obsolete chloride of lime solution.

It is based on
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Has been proved by years of
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Needs hardly any attention, yields a
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never obtained hitherto and
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4% to 5% less than with the old chloride of lime process.

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IF

you strip your goods,

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from standpoint of economy as well as quality of fabric.

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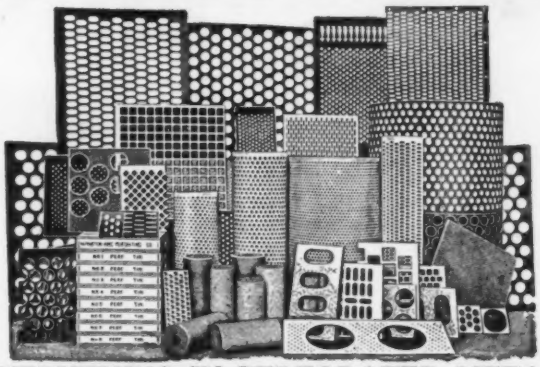

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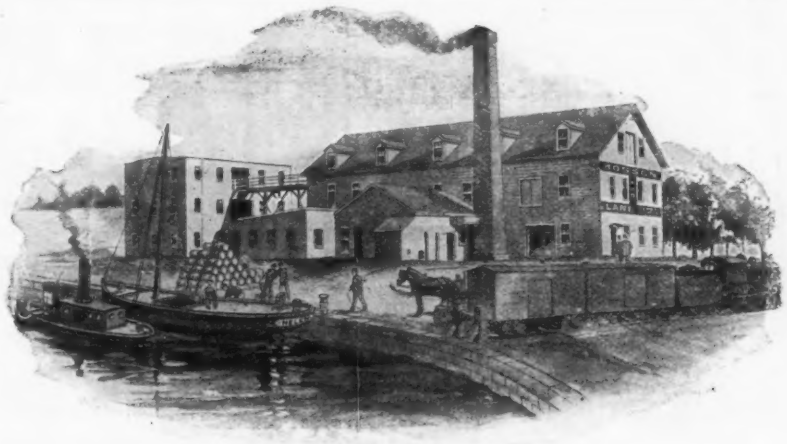

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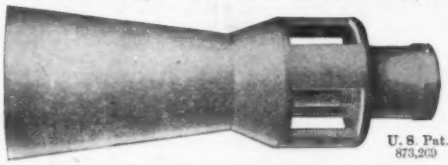

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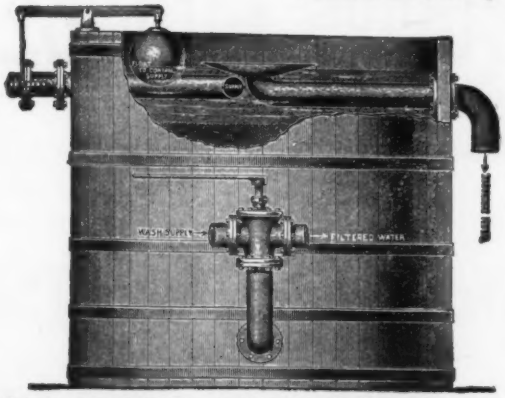

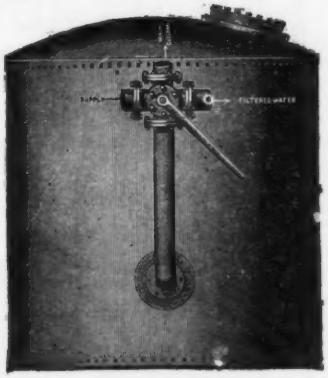

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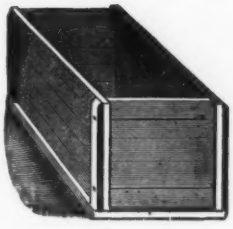

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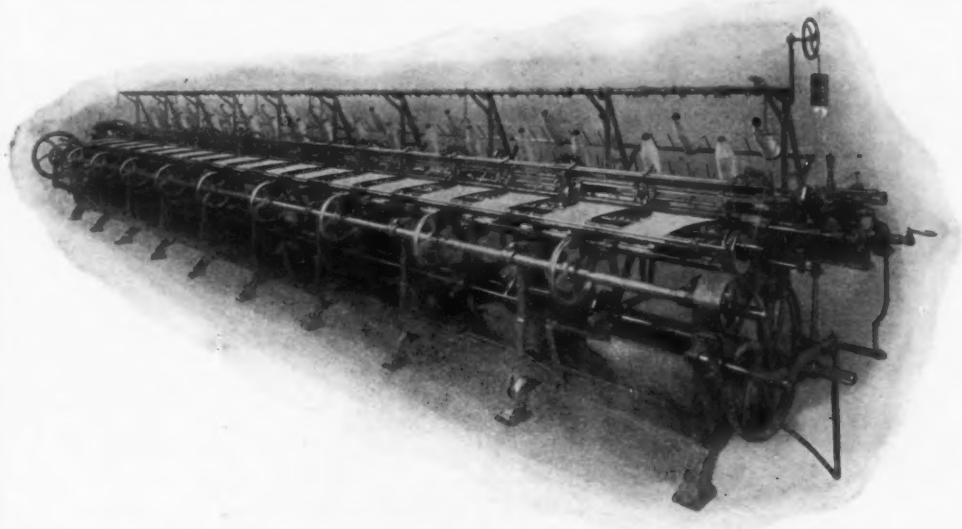
Largest Manufacturers of all classes of Hosiery Machines.



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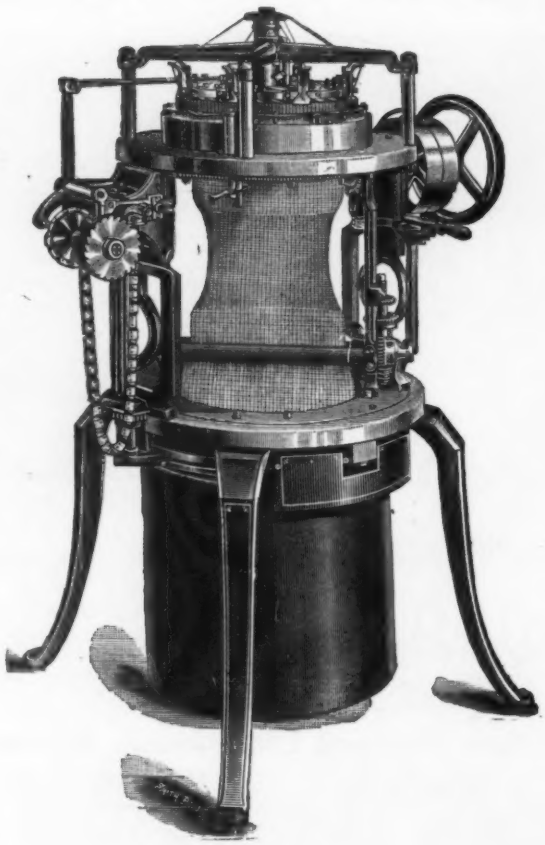

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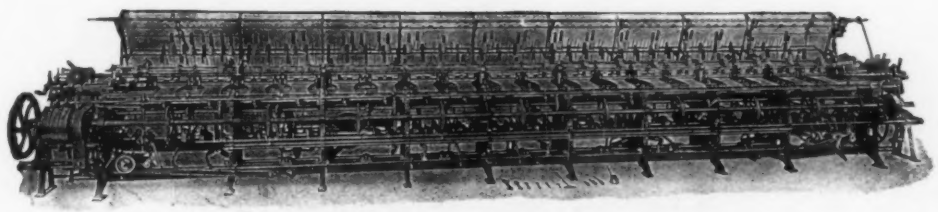

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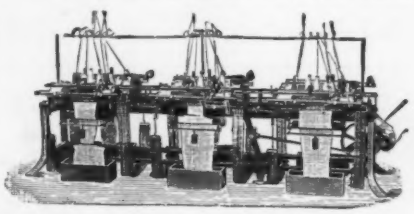

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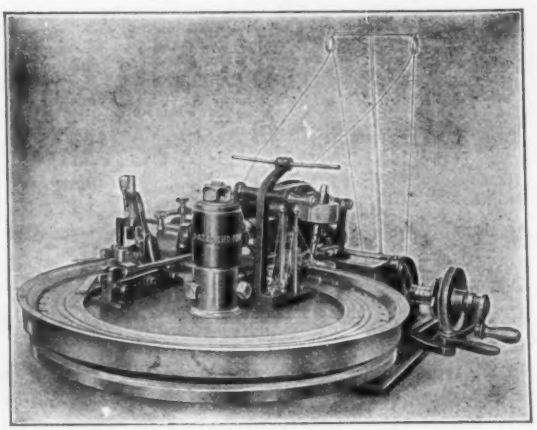

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No Hosiery or Underwear plant up to date without this machine.

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Leading Manufacturers of

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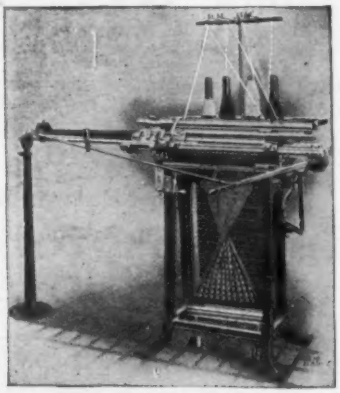

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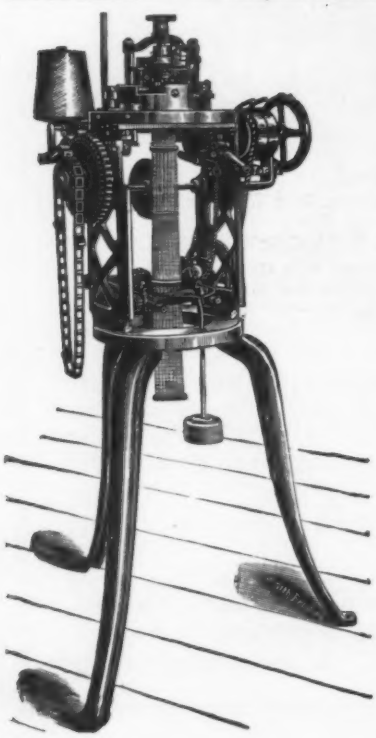

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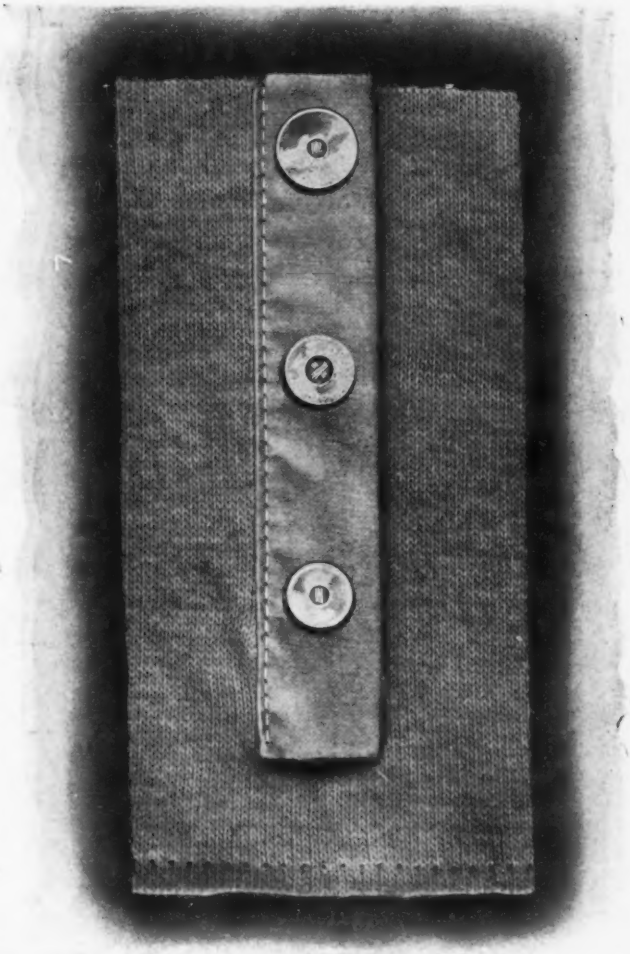

Singer Machine No. 62-18. Is used for folding and stitching the button stay to knit underwear, etc. This machine has one needle and one looper producing a double elastic chainstitch. The auxiliary feed-mechanism also prevents stretching the knit material while the stay is being formed and stitched. The transverse tubular binder has proved an entire success in handling silesia, domet and other staying materials with equal facility. The machine and its fittings are simple in construction. Operators immediately become proficient in handling the machine at 3,000 revolutions per minute, producing from 150 to 175 dozen per day.

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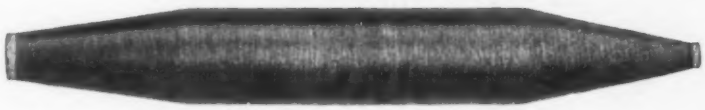

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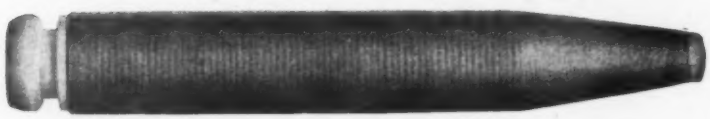
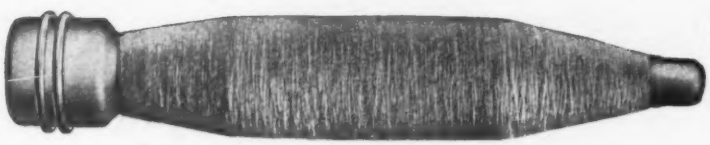


AND IMPROVES THE QUALITY

OF THE FABRIC



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Will not break buttons.

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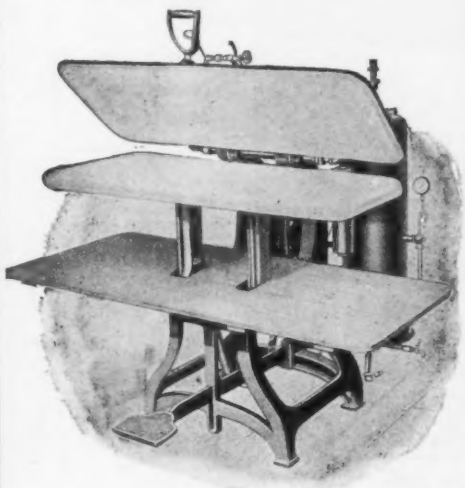

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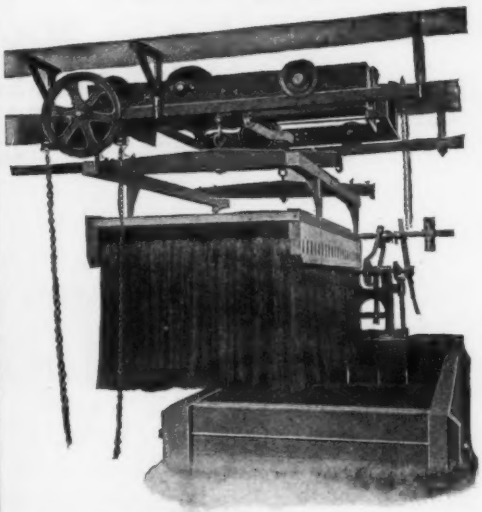

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To Reduce Cost of Production by Increasing Output of Operators

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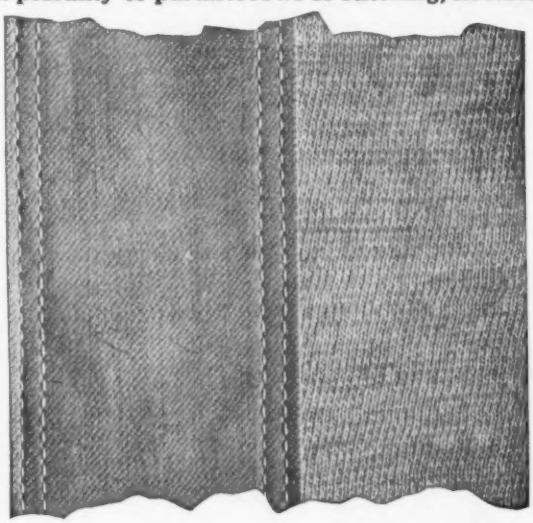
Yielding Bottom Presser Foot to be used where different thicknesses of Fabric are being Stitched Simultaneously



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One Operation

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Knitting Machinery

Wishes to call the attention of the manufacturers of Ribbed Hosiery and Underwear to the new patented

Double Acting Attachments for Ribbers

sold on its merits only. Here are a few of its MERITS:

Double Production; as it is double acting; fills your orders in half the time or more orders in the same time; you produce in six months what it now takes you one year to do; does the work of two machines.

Costs Less; requires just half the space, that means less rent or investment; weigh or measure the product, then compare with present methods; makes a good RIBBER better. New parts all built on the interchangeable PLAN. We are changing over either WILDMAN, BRINTON or SCOTT & WILLIAMS MAKES of machines.

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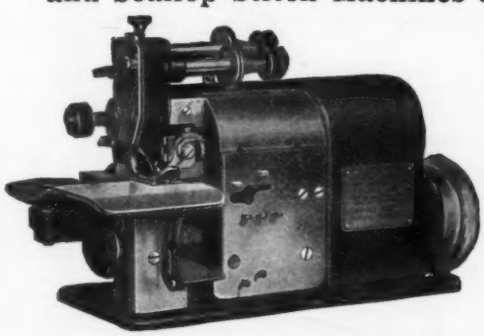
High Speed Overseaming, Overedging and Scallop Stitch Machines are

FAST
DURABLE
Light Running



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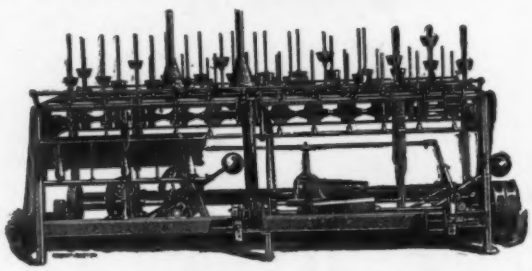
Automatic Racking and Striping Machines for Sweaters, Cardigans, Collarettes, Cuffs and Anklets.



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Full Automatic.

"The KNITTER that KNITS"

THE LARGEST PRODUCER OF PERFECT WORK.
SIMPLE, POSITIVE AND EASY TO OPERATE.

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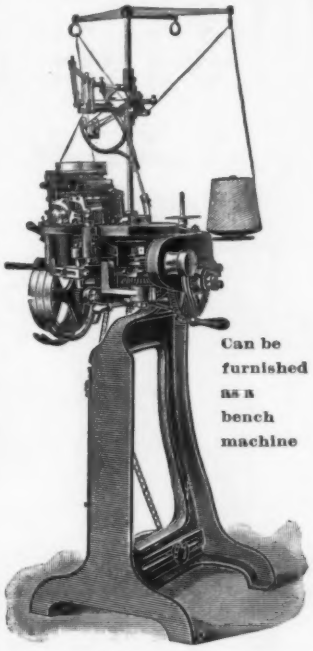
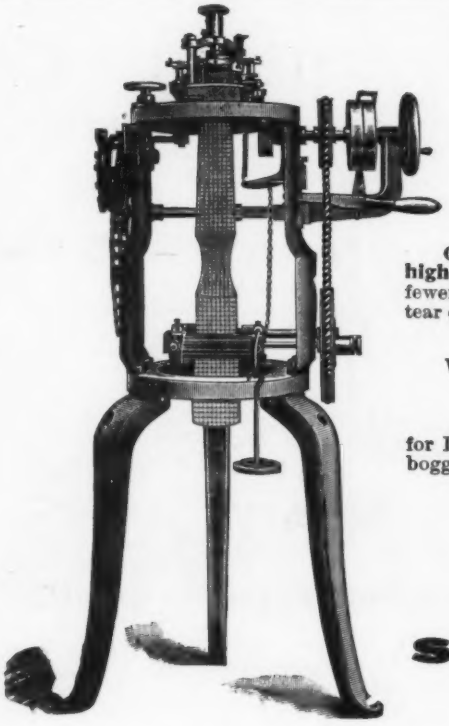


Can be furnished as a bench machine



High Speed Rib Knitting Machinery.

Our latest model machinery has been designed to run at very high speed, giving large production. This is accomplished with fewer seconds, less breakage of needles, less jar and wear and tear on machines than has been customary at lower speeds.

We also make Special

STRIPING AND DESIGNING MACHINES

for Fancy Golf Stockings, Bathing Suits, Sweaters, Toques, Toboggan Caps, Skirts, etc.

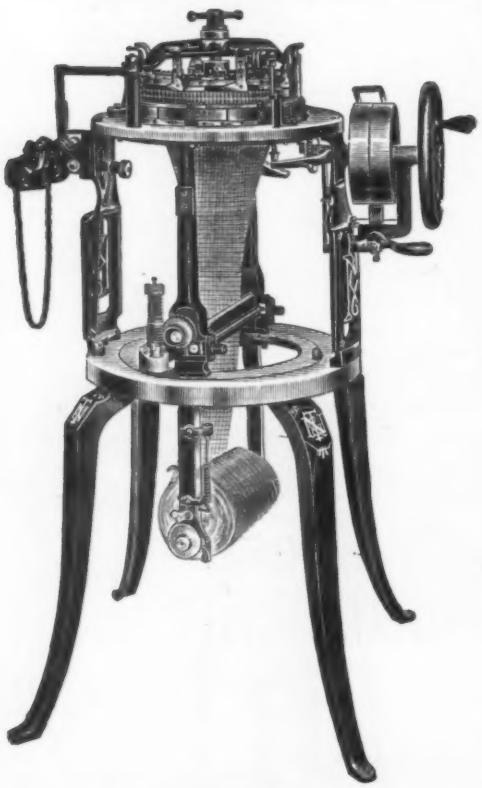
Our Machinery gives large production at low cost and enables manufacturers to meet the market always and make a profit.

STAFFORD & HOLT,

LITTLE FALLS, N. Y.

NYE & TREDICK CO.

718-720 Cherry Street,
PHILADELPHIA, PA.



Circular Rib Knitting MACHINERY

For making Ribbed Underwear, Combination Suits, Sweaters, Cuffs, Shirt Borders, Hosiery, etc. Correct Construction, Excellence and Durability.

LATEST IMPROVEMENTS
QUALITY OF FABRICS AND PRODUCTION
UNEXCELLED

NYE & TREDICK CO.

If You Want

Largest Production For Least Money

Write

Geo. D. Mayo Machine Co.,

Laconia, N. H.

Latest
Simplest
Best

MAYO'S

New Full Automatic Knitter

PHILADELPHIA OFFICE,
KNICKERBOCKER BLDG., COR. SIXTH AND ARCH STS.,
B. M. DENNEY, REPRESENTATIVE.

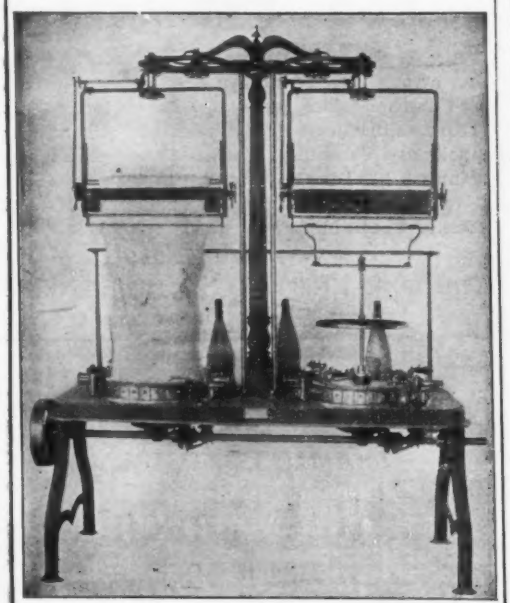
Established 1870. — Incorporated 1890.

CRANE M'F'G. CO.

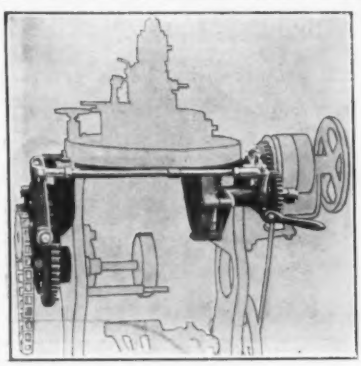
LAKEPORT, N. H.

Manufacturers of

Spring and Latch Needle Machines for both rib and plain work, producing a great variety of fabrics. Patent removable hardened Wing Burr Wheels.



Spring Needle Underwear Machine.



33% Increase

in production of Circular Rib Knitting Machines is obtained with our attachments.

For particulars address

Climax Machine Company

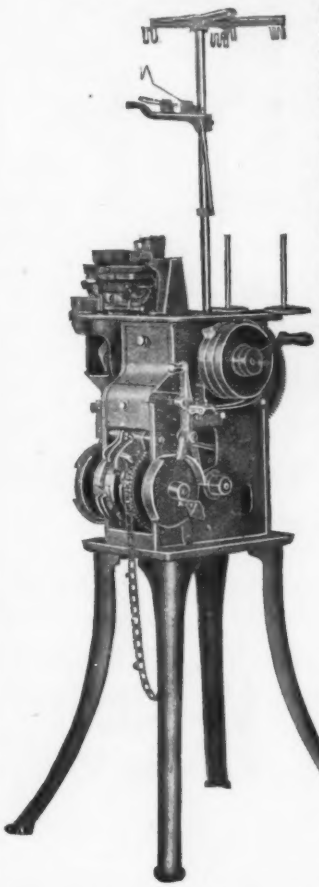
1753 N. HOWARD ST. PHILADELPHIA

"THE BANNER"

Hemphill's Latest

A FULL AUTOMATIC MACHINE

Specially adapted to



Manufacture Hose with Linen or Mercerized heel or toe.

Also for

Plaited Goods

and

String Work

High Splice

and

Double Sole

Largest Production

More Yarn Changes

Highest Speed

Simplest

Least Repairs

Produces a Superior Quality of Work.

MANUFACTURED BY THE

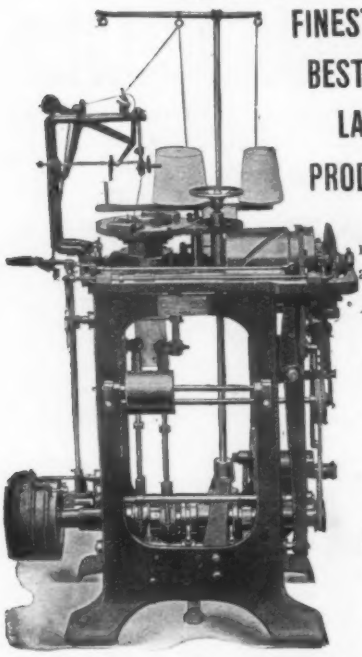
Hemphill Mfg. Co.

131 Clay Street, PAWTUCKET, R. I.

"NATIONAL"

Stands for

FINEST GAUGES
BEST FABRIC
LARGEST
PRODUCT ON



Greatest Variety of Laces and Novelties.

Allautomatic.

Lowest Cost for Operating

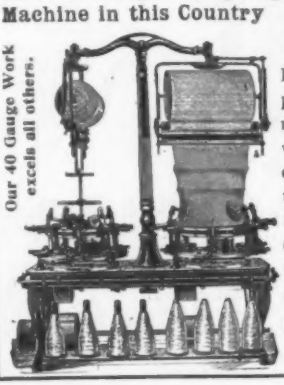
Also Rib Knitting Machinery, Overedge, Crochet and Shell Stitch.

NATIONAL AUTOMATIC KNITTER CO.

1028 Susquehanna Avenue. PHILADELPHIA, PA.

We are the Oldest Manufacturers

of this Design of Spring Needle Knitting Machine in this Country



40 years' experience

Do not be misled by people who became manufacturers in 1903 without any previous experience who are trying to represent that they are the oldest manufacturers. Investigate. Call and see our fine gauge work.

Robt. W. Gormly & Co.
Troy, N. Y.

The New Boss Seamless Knitter

Do you want the biggest production with the least menders, for the least money? If so, write to the Boss Knitting Machine Works for their circular with full directions. There is no cylinder to be handled. We use only one cylinder and transfer device for half hose or ladies' hose. This machine beats them all. Has no equal for simplicity and durability. Makes 300 revolutions per minute. Built in sizes from 2¼ to 5½; from 40 to 224 needles. Automatic in heel and toe. It is the strongest built knitter on earth.

Send for prices and particulars.

THE BOSS KNITTING MACHINE WORKS,
Cor. Elm and Reed Sts., Reading, Pa.

"Acme" and "Hemphill"

SEAMLESS HOSIERY

Knitting Machines

built by

Mayo Knitting Machine & Needle Company

Franklin, N. H.

Answer all purposes in the *most reliable*, *up-to-date*, and *economical* manner. Write us for full particulars.

Manufacturers like our Latch Needles

because we make a superior grade of needles.

Philadelphia Office, Knickerbocker Bldg.

STANDARD MACHINES FOR HOSIERY MAKING

The STANDARD F, with attachments, can make any and all of these fabrics:

Plain Goods
Plaited Work
Three Color Stripes
Tipped Heel and Toe
White Foot
Changed Heel and Toe
Garter Top
Loopers Slack Course

Most Stockings—Best Fabrics—Longest Life

Standard Machine Company

OFFICE AND SHOW ROOMS

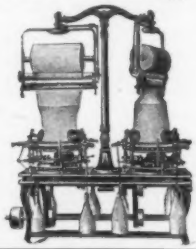
330-340 North 12th St., Philadelphia

We Are the Oldest Manufacturers
IN THE WESTERN HEMISPHERE
Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

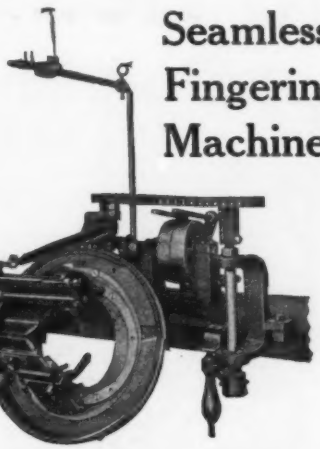
We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:

Cross Question 123. How long have you been a manufacturer of knitting machines? Answer. I started in this business about the middle of May, 1900.



Tompkins Knitter

This design was adopted in 1875.
BUSINESS ESTABLISHED in 1846, before ROBERT W. GORMLY Was born, according to his testimony in the case above cited.



Seamless Fingering Machine

Knit Glove Manufacturers

If you want to be up to date, ask us for particulars of this machine. Indorsed by leading manufacturers.

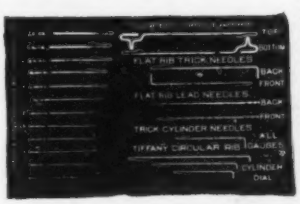
James Leckie & Son,
821 N 13th Street, Phila, Pa.

CHARLES COOPER,

BENNINGTON, VERMONT,

MANUFACTURER OF

Knitting Machinery



Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder, **Spring Needle Cylinder Rib-Top Machines** for making Cuffs, Drawer Bottoms and Shirt Borders. **Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, etc.**

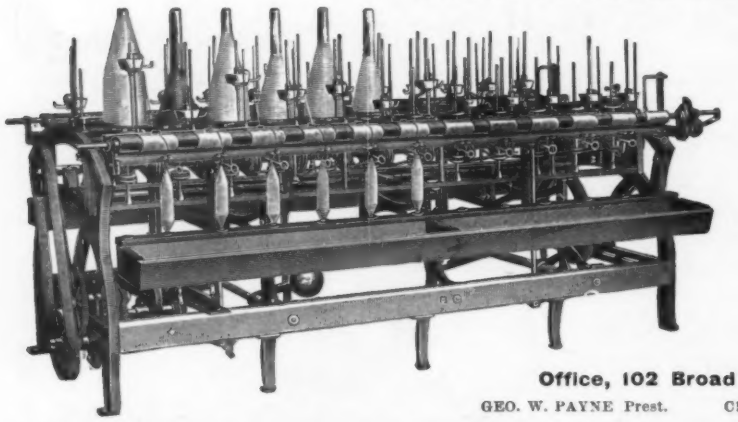
COLLARETTE ATTACHMENT.

American Representative:
G. H. ROGERS,
509 Clinton Street, Hudson, N. Y.

European Representative:
FELIX LEDERER,
1x/4 Schubertgasse, Nr. 22, Vienna, Austria.

OVER 1,900 PAYNE WINDERS IN USE

By Hosiery Manufacturers,
Wind for Cop, Skein or Bobbin.



Improved

Upright Spoolers,

To Spool from Cop, Skein or Bobbin.

Doubling Spoolers for doubling 2, 3, or more ends into one.

Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers, Warp, Spool, Spooler, Guides, Bolsters and Stops Made and Repaired at Short Notice.

GEO. W. PAYNE CO.,

[Est. 1865. Inc. 1903.]

Office, 102 Broad Street, Pawtucket, R. I.

GEO. W. PAYNE Prest. CLINTON F. PAYNE, Sec'y. and Treas.

Automatic Machine Works

GEO. W. STEVENSON, Inventor and Proprietor 315-315½ Elm Street, Reading, Pa.

Builders of

Automatic Singeing Machine and The Cold Hosiery Press.

The Automatic Singeing Machine is the only machine on the market equipped with a **Patent Single Plate Positive Stripping Device,** which saves gas, hose and labor. Built in two sizes double and single feed.

The Cold Hosiery Press is very simple to operate, is less expensive, no complicated parts and requires very little power. With this press the life of the yarn is retained and the finish of the hosiery after coming out of the press cannot be equalled by any other press hot or cold. The press is built in two sizes.

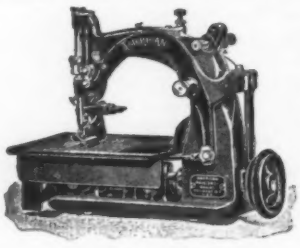
For further information address as above

American Raveller Company

PHILMONT, N. Y.

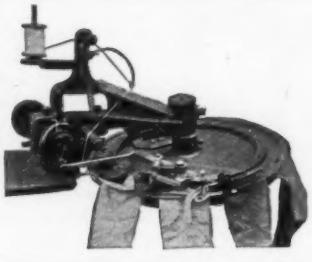
MANUFACTURERS AND PATENTEES OF

High Speed, Elastic Stitch Sewing and Trimming Machines



Also ravelling machines for making knit underwear and hosiery full fashioned.

2 line and twin needle machines for fancy stitching.



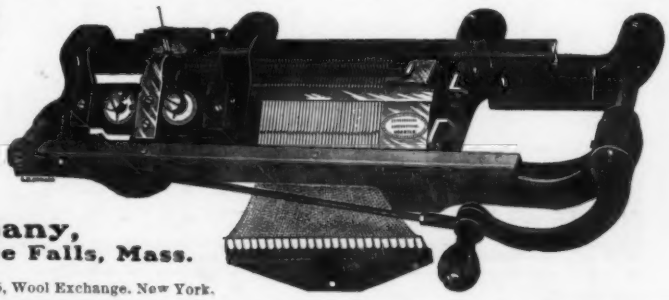
The LAMB

LEADER OF KNITTERS

Original and Still the Best.

Most widely used; being operated in every civilized country in the world. For description, prices, etc., see catalogue.

Circular Machines,
Rib Top and
Seaming Machines.



Lamb Knitting Machine Company,
P. O. Box, 5888, **Chicopee Falls, Mass.**
J. E. WOODHEAD, 100 22d St., Chicago.
L. D. SANBORN, Room 505, Wool Exchange, New York.

HEPWORTH & CO.'S
Patent Single-Stitch

LOOPING MACHINE.

Needle working from the inside, avoiding the breaking of needles and points and picking up the metal.

Single and Double Stitch, or Both Combined.

JOHN W. HEPWORTH & CO.,
N. W. Cor. Lehigh Ave. and Mascher Street,
PHILADELPHIA.

WILLIAM C. BULL, BENNINGTON, VERMONT.

MAKER OF

For Ladies', Gents' and Children's Goods.
Latest Styles.
Best Workmanship.

Drying Form Boards

OF EVERY VARIETY.

David Richter, Inc.

were the first machine builders in Chemnitz, Germany, to construct

Full Fashioned Hosiery Machines

upon the Cotton principle and which since their introduction have never been excelled by any other machine builder; be it in construction or productiveness. Built in all gauges and for any material, cotton, wool, lisle or silk.

Sole American Representative,

E. O. SPINDLER, 350 Broadway, New York, N. Y.

PAXTON & O'NEILL'S

Full Automatic Knitter

FOR ALL KINDS AND GAUGES OF SEAMLESS HOSIERY.
RANGE ON HALF HOSE AND LADIES FROM 260 NEEDLES DOWN.

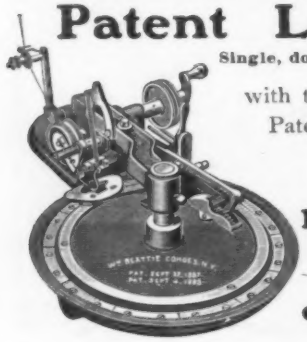
3-4 AUTOMATIC KNITTER

With Lace Effects.

Exclusive rights to BROWN'S LACE ATTACHMENT.

537-39-41 North 3d St., - - - - - PHILADELPHIA.

Patent Loopers

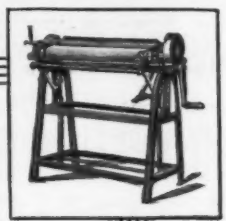


Single, double and two thread Stitch.

with the
Patent Raised
or
Straight Points.

Beattie Manufacturing Co.,
Cohoes, N. Y.

This Ironing Machine



Is the ideal thing for the small plant for ironing knit goods, etc. It is operated by hand or power and heated by gas or gasoline. Made in several sizes. Largest size costs about 2c. per hour for heat Pressure is adjustable.

Write for particulars.

STEEL ROLL MACHINE CO.
254 B. Madison St., Chicago, Illinois

GENERAL MACHINE WORKS

YORK, PA.

MANUFACTURERS OF

RIBBERS

SPLICERS

SLEEVERS

¶ OUR LATEST IMPROVEMENTS MAKE OUR RIBBER NOISELESS IN OPERATION.

¶ WOULD BE PLEASED TO SUBMIT SAMPLES OF FABRIC.

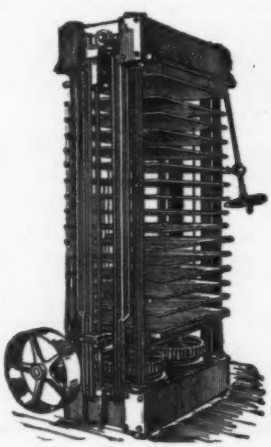
¶ MACHINES SHIPPED TO RESPONSIBLE PARTIES ON THIRTY DAYS TRIAL.

¶ WE ARE PREPARED TO CUT CYLINDERS AND DIALS PROMPTLY AND ACCURATELY.

You Save Enough Insurance to Pay for the Equipment.

So it costs you NOTHING to have the AMERICAN WATCHMAN'S CLOCK. Fully approved by all insurance companies. We equip factories with Fire Alarms, Signals, etc., also Employee's Time Recorders, and Telephone Systems. Electric Time System consists of Master Regulator in office with secondary electric clocks throughout the mill, insuring accurate time. Send for particulars.

Pettes & Randall Co., 150 Nassau St., New York



Reliance Hot Plate Press

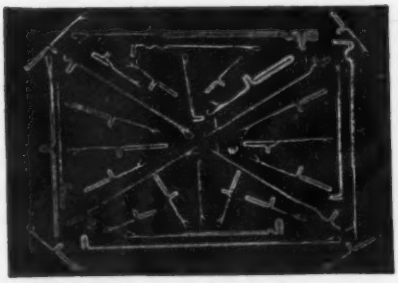
For Hosiery and Underwear Trade.

For price and particulars address

CHARLES HART
Hedge and Brown Sts.,
Frankford, Phila., Pa.

TRY OUR "SUPERIOR" OR SUNKEN RIVET-HEAD NEEDLES

They will save you money.



Dodge Needle Co., Manchester, N. H.

WM. COREY CO.,

Manufacturers of Knitting Machine

Latch Needles

MANCHESTER, N. H.

EXCELSIOR NEEDLES.

The best Hosiery Needles in the market.

Manufactured by

WARDWELL NEEDLE CO., Lakeport, N. H.

WM. BREEDON'S SON,

MANUFACTURERS OF

Spring Knitting Needles

AND BURR BLADES OF ALL KINDS.

AMSTERDAM, - N. Y.

KEYSTONE LATCH NEEDLE CO.

JOHN C. EGLY, MGR.

MANUFACTURERS OF

Patent and Regular Latch Needles

Needles for all makes of Knitters and Ribbers.
Keystone Spring Bottom Needles for all makes of Knitting Machines always in stock for immediate delivery.
Special Needles made to order.

543 W. Lehigh Avenue, Philadelphia, Pa.

Standard Latch Needles

MANUFACTURED BY

EXCELSIOR NEEDLE CO.,

TORRINGTON, CONN.

The Largest Manufacturers of Machine Needles in the World.

STANDARD

TRADE MARK.

Longer Wear. Better Work.
Less Mending. Fewer Seconds.
Have you tried our
Patent Milled Rivet?

Agents

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Manufacturers' Supplies Co 418 Arch St., Phila.
C. Shawl, 414 Polk St., San Francisco, Cal.
J. C. Strittmatter, 2a Calle de San Francisco No. 9, City of Mexico, Mexico.

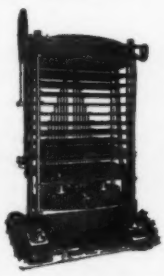
L. T. IVES CO.

Manufacturers of all kinds of

SPRING KNITTING NEEDLES

NEW BRUNSWICK, N. J.

The CRAWFORD



HOLLOW STEAM

PLATE PRESS

For Knit or Woolen Goods.

The most reliable machine of the kind on the market.

PRESS PAPERS and FENDERS.

SPENCE & RIDEOUT,

Successors to

J. J CRAWFORD & SON,

NASHUA, N. H.

Established 1868.

The Continental Latch Needle Company.

Manufacturers of the BEST GERMAN NEEDLE on the Market.

RIVETS GUARANTEED. Samples on application. SPRING NEEDLES A SPECIALTY.

120-122 LIBERTY STREET, - - - - - - - - - NEW YORK.

McCormick Turbines

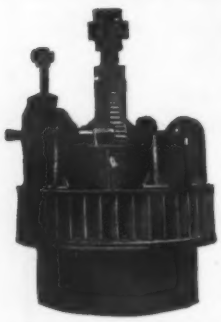
both Cylinder and Wicket Gate, giving **ENORMOUS** power are used in hundreds of textile mills throughout the world.

We make a specialty of designing turbines to meet the requirements of the public.

We build Francis turbines in spiral flumes to operate under high heads.

Boston Office, 176 Federal Street.

S. MORGAN SMITH COMPANY, York, Pa., U.S.A.

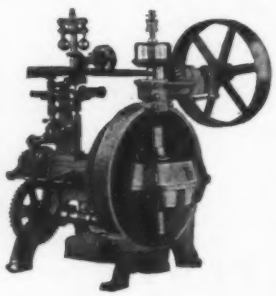


Risdon=Alcott Turbine Co.

MOUNT HOLLY, NEW JERSEY, U. S. A.

RISDON CELEBRATED TURBINE
ALCOTT HIGH DUTY TURBINE
LEVIATHAN HINGED GATE TURBINE
On Horizontal or Vertical Shafts.

These Turbines are recognized as the most effective water wheels made. Your inquiries should come direct to us for this class of machinery.



Water Wheel Governors

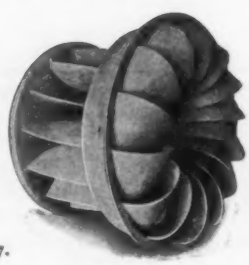
OUR compensating type more fully meets the needs of Textile Mills than any other. This is due to its being the only successful quick acting, mechanical, governor and its perfect control of large as well as small changes. 1500 of this type in use in mills and electric power plants.

Woodward Governor Co., Rockford, Ill.

HUNT-McCORMICK WATER TURBINES

CYLINDER or BALANCE GATE CASING

Highest Efficiency, Greater Power,
Easy and Quick Regulation,
Steady Motion, Durability.



RODNEY HUNT MACHINE CO.

ORANGE, MASS.

BRANCH OFFICE: 70 Kilby St., Boston, Mass.

See our Woolen Machinery advertisement on page 47.

ANNOUNCEMENT

Is hereby made of the consolidation of

American Blower Co. of Detroit

and

Sirocco Engineering Co. of New York

All business will hereafter be transacted under the style and name of

AMERICAN BLOWER CO.

(Incorporated under the laws of the State of New York.)

All patents covering broadly the principle and construction of the "Sirocco" type of blower are acquired and controlled. Imitators and infringers will be prosecuted and important suits now pending will be continued.

See notice in this issue

SIROCCO

AMERICAN BLOWER COMPANY

Principal offices, Detroit, Mich.

Works at Detroit, Mich. and Troy, N. Y.

Chicago New York London

SALEM ELEVATOR WORKS

SALEM, MASS.

ELEVATORS

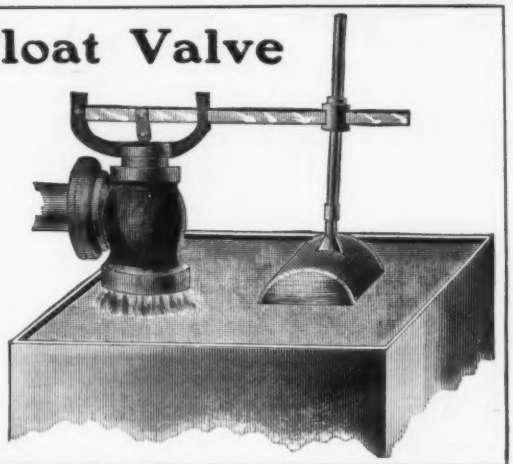
ESPECIALLY ADAPTED FOR MILL USE.

SEND FOR ILLUSTRATED CATALOGUE AND ESTIMATE.

The "Kellogg" Float Valve

Is Warranted Always to Operate

as it has no packing gland which can be tightened up to cause it to stick, thereby causing the tank to overflow. It is a balanced valve and operates with a smaller float than any other make of valve of the same size.

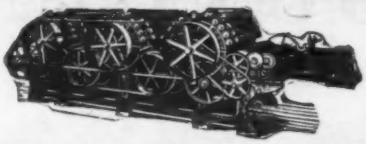


J. & W. Jolly, Inc.

500 East St., Holyoke, Mass.

Manufacturers of the Original "McCormick Holyoke Turbine." Both Vertical and Horizontal

MAR 15 1909



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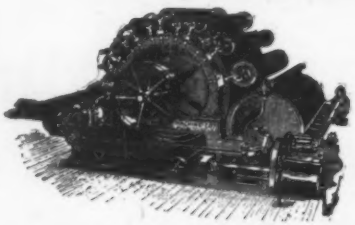
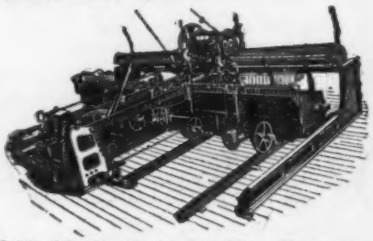
For reducing to Fibre Cotton and Wool Waste, Cloth Clippings, Etc.



WOOLEN MILL MACHINERY



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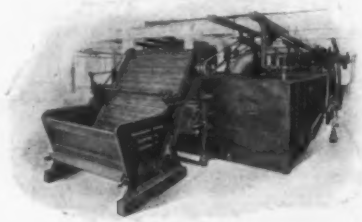

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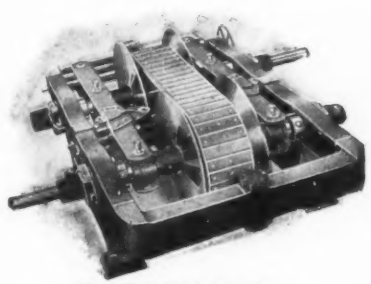

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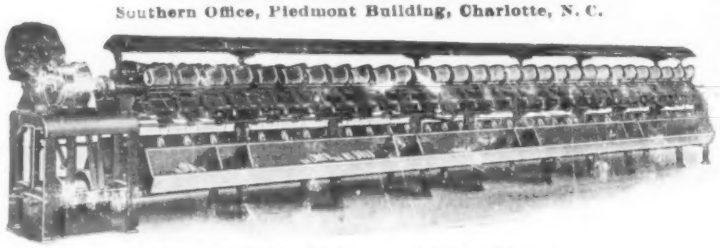

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